# The next generation CONTROL®





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### **CONTROL® 10.0 – A Unique Vision for Financial Management**

CONTROL version 10.0 represents a significant step forward in delivering KCI's vision of a broad and deep platform for the development and management of financial applications.

The key element of that vision is that high value applications are created by end-users who understand business requirements and have the insights into how to build systems to meet those needs.

To serve those users, KCI believes we must deliver a product which:

- Makes it simple for financial users to build models, integrate data, and create and deliver reports and analyses
- Integrates seamlessly with their most commonly used productivity tool Microsoft Excel
- Shortens development times, reduces costs, and allows for risk free experimentation
- Delivers the transparency necessary for users to easily grasp the interconnections between components of complex applications
- Opens the door to integration with a wide array of critical data sources, from ERP systems, data warehouses, external sources, and custom applications
- Provides a comprehensive suite of tools to administer, automate, and manage a large scale application suite with minimal effort

Version 10.0 continues to deliver CONTROL's traditional power and flexibility with a significant change to the user interface for the administrator. While the basic concepts continue from version 9.2, the mechanism for navigating and interacting is streamlined, simplified, and more completely integrated into Excel.

There are several important changes and enhancements for the Information Navigator user as well. However all existing client applications should continue to run without modification, and end-users will not see a disruption to their current processes.

Version 10.0 marks a major change in CONTROL's underlying technology, and will serve as the foundation for the evolution and enhancement of the product in the future.

### The New User Interface

In version 10.0, the administrative user will no longer deal with the object manager and a variety of dialogs for each type of object. Because CONTROL is targeted to sophisticated Excel users, object creation and editing is performed directly within the Excel environment, with individual objects organized by workbooks. Information related to different parts of an object – its structure, security, etc. are presented on the tabs of the workbook, and all of the wonderful Excel presentation features are leveraged to present data or capture changes.

The use of Excel's ribbons has been embraced so that finding features and functions is simple and natural to the Excel expert, and navigation is intuitive and seamless.



#### Elements of the User Interface

The design of the version 10 interface rests firmly on established mechanisms already familiar to the Excel user, and continues the themes introduced in Control Version 9.0 such as the use of ribbons, context menus, and task panes. In addition to these existing mechanisms, property grids now play an important role in Control 10.

Extensive effort was made to bring the most commonly used features of the product to the forefront, and put less frequently used functions one step away. This makes the interface less cluttered and imposing.

Note that the CONTROL object model is still the primary organizing principle for the product and is mostly unchanged from version 9.2.

#### The Developer Ribbon

The gateway to all administrative functions is the Developer Ribbon:

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N	avigation	Ca	tegory		Application	n	Sec	urity	Mappings		Actions		Private/Hidden	Help		

The options on this ribbon allow you to quickly access the most commonly used functions to build and maintain applications:

- Object Pane turns on and off the object navigation pane on the left side of the application
- Browse Objects lets you select an object for editing or review
- Universe launches the new visualization function
- Category Functions lets you restrict the set of displayed objects to a specific set of categories. As your CONTROL usage grows to encompass multiple applications you can limit your focus to just the objects you are working on. You can temporarily turn off the filter when you need to see all objects.
- Application lets you add, edit, or delete the three most important structural objects
- Security lets you manage users and privileges
- Mapping Wizard lets you define integration points within CONTROL and between CONTROL and other applications
- Actions allows you to save or discard your pending changes
- Private/Hidden turns on and off the visibility of personal, group, or hidden objects

As an administrator, this ribbon is your landing point for your use of CONTROL, and should put most common operations no more than a couple of clicks away.



In order to introduce more users to the process of creating CONTROL applications, you do not need an Object Manager license to access the Developer Ribbon. However, Information Navigator licensees may only create private objects, other than user interface objects.

#### **The Object Navigation Pane**

The object navigation pane can be displayed and hidden by clicking on the Object Pane button on the developer ribbon, and shares the left hand side of the workbook with the CONTROL application menu:

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bject Browse Univer	se Category	Ignore	Model Dimension D	ata Users Roles
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Favorite Objects				
2000				



The two tabs – Type and Category – organize the objects either by class and subclass, or by user defined categories.

Here is what's new on the Type tab:

- Objects are now organized into 4 major groups Structure, Interface, Process, and Security according the primary purpose of the object
- You can identify frequently accessed objects as Favorites (similar to Windows File Explorer) for quick selection, and the 20 most recently used objects appear in reverse chronological sequence
- You can set up a category filter so that you only see objects in categories you are interested in, and quickly simplify your choices, in all contexts in which you can select an object
- You can search for any string by typing a few characters in the search box

The category tab organizes objects within the category in their logical structure, so related and supporting objects appear as part of the substructure of a primary object, such as a model:



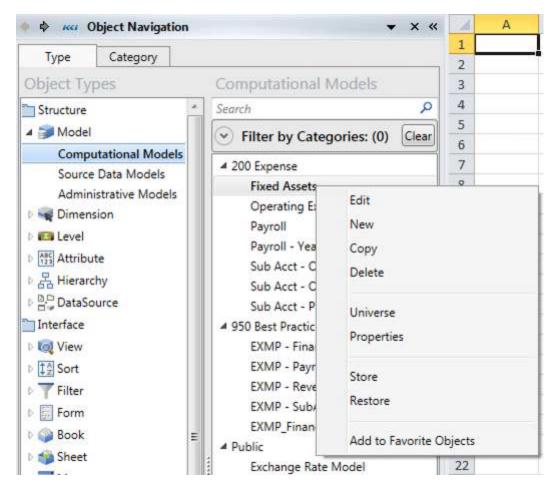
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850 Security	Dimensions		8		
900 Development	Mappings		9		
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Menu System	Operating Expenses		13		
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	Menu Menu		27		
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Favorite Categories	D Script		31		
Recent Objects	Transform		32		
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Here is what's new in the Category tab:

- The organization of objects has been refined, so that views and mappings appear within the objects they apply to
- Favorite categories can be added
- The tree of objects within the category can be easily searched from the search box



Once you have navigated to the desired object in either tab, a right click brings up a context menu which allows you to perform all the common operations on the object:



For views, books, forms, and sheets, the object can also be opened. Mappings, scripts and transforms can be run. Double click will edit the object.

You can shift between the Object Navigation and Application Menu by using the left and right arrow in the upper left or the drop down:

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#### The Edit Book Concept

When you edit an object in version 10.0, CONTROL will open up an Excel workbook which not only allows you to create and change the structure or content of the object, but also gives you a way to understand and visualize the object's structure.

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		2,760,557	914,058	966,930	879,569	2,016,938	650,565	636,039					·	
	480,501	225,863	72,160	81,302	72,402	254,638	71,891	77,880		8		_	* 🔝 Immediate update	Update

The contents of the edit book differ for each class of object, and in many cases there are differences by subclass as well.

However, all edit books share the following characteristics:

- The most important part of the object's structure will appear on the first tab of the edit book
- Secondary information will appear on subsequent worksheets and those worksheets may initially be hidden if the information is not commonly accessed
- Every edit book has a ribbon associated with it, which is specific to the object class and contains:
  - The most important properties of the object
  - A Properties button which launches a dialog which contains all the object's properties
  - A mappings button which provides access to manage or run any mappings to and from the object
  - Buttons to show or hide secondary information



- A button to launch a Universe visualization of the object
- Buttons to Save and Discard pending changes to the object, or Close the edit book
- Each worksheet contains distinct content, which is typically a view computational, object, or administrative; or might be a sheet or a form
- Each worksheet may have a custom task pane on the right hand side that provides a custom mechanism for editing the object i.e. adding dimensions to a model as shown above
- The task pane may interact with the contents of the worksheet, either using the worksheet to display changes made in the task pane or using the worksheet as a target for making those changes
- The task pane can be maximized to cover the adjacent worksheet, if you want more space and an enhanced layout and do not need to see or change the contents of the worksheet
- The edit book will be named with the class and name of the object
- Edit books may be customized by an administrator for a specific object or class of objects to contain all the information considered relevant to the task of creating or maintaining the object

An important feature of the edit book approach to building applications is that you can have multiple edit books open at the same time, and you can see the impact of changes you make to one object on other objects or views – **before you save (or cancel) the changes!** 

You can use standard Excel or Windows functions to navigate between edit books. You may find that adding Switch Windows to your quick access toolbar useful:

	り・に・四・	-
File	Home In	Switch Windows
Name	Expense	Switch to a different currently
ID	EXPENSE	open window.

#### **Property Grids**

The version 10 interface has embraced a common mechanism for dealing with big collections of options and characteristics of the objects and object components in CONTROL – the property grid.

This is the property grid for the model shown above:



E Search			
Identification			
Name	٢	Great Plains	
ID	٢	GREATPLAINS	
Class		Model	
Subclass	۲	Computational Models	
Category		900 Development (ID: 900DEVELOPMENT)	•
Description			
Currency			
Currency Code		(None)	•
X-Rate Model		Exchange Rate Model (ID: EXCHANGERATEMODEL)	•
Currency		Canadian Dollar	٠
Translation Map		EXMP - Standard Translation (ID: EXMP_STD_TRANS)	٠
Currency Type	<b>(j</b> )	Single Currency	•
Solve			
Solve Locks		(None)	•
Solve Pattern		(None)	•
Structure			
Is Floating			
Data Mask Options			
Data Mask			•
Exclusion Role		(None)	•
Inclusion Role		(None)	•
Sub Accounts			
Submodels			_
Sub Account Data Source		(None)	
Sub Account Map		(None)	7
Sub Account Mapping		(None)	
Storage Logging Accessibility Miscellaneous			
		r destination time periods to identify currency conversion rates in the Exchange Rate Note that you can override this by selecting a different code for a view or a mapping.	

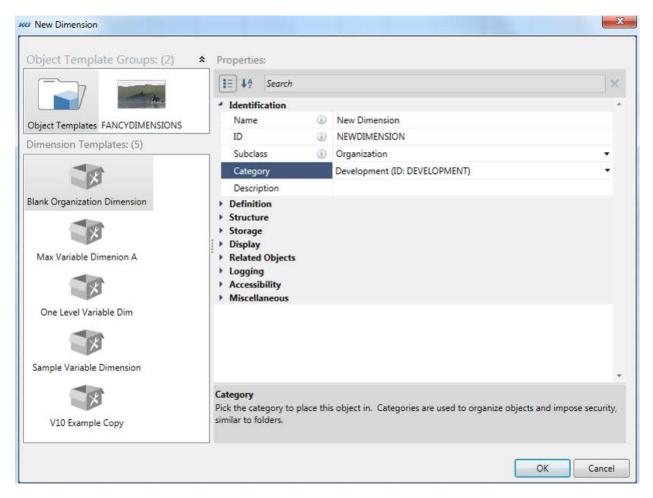
Rather than distributing the options for each object across various tabs and custom controls in dialogs as in earlier versions of CONTROL, the property grid organizes them in this standard format which:

- Allows the properties to be organized and displayed by category or alphabetically ٠
- Permits compression or expansion of categories so less commonly used properties can be minimized ٠

- Shows the property description at the bottom of the dialog
- Has a consistent mechanism for displaying non-updateable properties (grey) or required properties (bold)
- Provides a search mechanism to quickly find a property of interest

#### The New Object Dialog

To simplify and expedite the creation of new applications, CONTROL version 10 adopts the concept of application templates from Excel. Rather than continually re-creating and re-specifying common structures and characteristics, in version 10.0 the user is offered a menu of "object templates" to choose from:



The new object is created with the structure and properties inherited from the selected template, so aside from supplying a name, many objects can be created with a couple of clicks.

Some important features of the New Object dialog are:

- Object templates reside in a specially named access category "Object Templates"
- That category can have multiple grouping sub-categories, so that the templates can be grouped and organized



- The set of templates can be customized by the customer
- Templates and template categories can have representative graphics (pictures) to assist the user in finding the appropriate one
- The new object dialog will only display the properties that are required for the user to define, so that they are not overwhelmed by a large array of options available for many CONTROL objects

#### **Common Capabilities**

There are several other common features that have been implemented consistently across version 10.0 interface:

- Search is available in virtually all cases where there is an extensive list or tree of choices
- Frequently used and common operations are available with a right click on the context menu
- The following options are available on the context menu wherever the underlying item is a CONTROL object:
  - Properties launches the property grid
  - o Universe shows a Universe visualization
  - Edit opens the edit book for the object
- Graphical previews are used extensively for dimensions and branches, and you can switch between the

graphical thumbnails and a table using the **buttons**.

### The CONTROL Universe

One of the most significant challenges facing a user building and maintaining large and complex CONTROL applications is explaining how it works to other users, consumers or contributors of data, or to an administrator or consultant who is unfamiliar.

The Universe is CONTROL's new mechanism designed to make intricate applications transparent and understandable.

The concept of the Universe was developed by looking at how people explain a CONTROL application using a whiteboard or pencil and paper. Those explanations generally begin with a picture, like a block diagram with the major components, such as models, forming the foundation. The structure of the models is described by detailing its dimensions, levels, and hierarchies, and then the picture is filled in by drawing arrows to describe data flows to data sources and models. In fact, documentation of most CONTROL systems includes this type of block diagram.

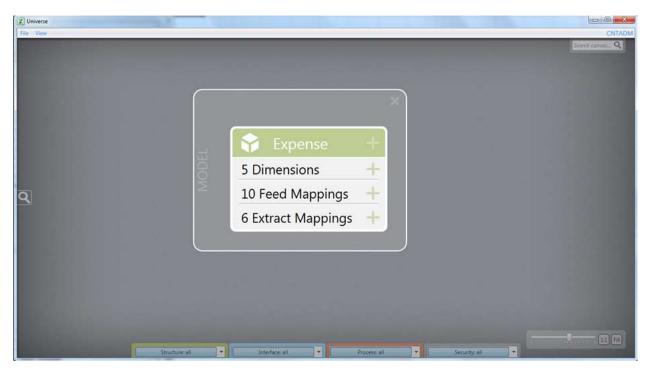
Simply, the Universe helps you draw a simple picture of your CONTROL applications, and explore and expand the details you are interested in.



#### **Visualizing Objects**

You can begin using the Universe by selecting the Universe option from the context menu for any object in the object navigation pane, or by clicking the Universe button on the CONTROL view ribbon when you have an open view.

Here is a Universe visualization of the JumpStart Expense model, showing its basic structural and interconnection information:



For more detail, you can click on any of the plus (+) controls:



		×
	😪 Expense 🛛 +	
	5 Dimensions -	
	10 Feed Mappings +	
	6 Extract Mappings 🕂	
	Dimensions	
	Department	
	Expense	
	Project	
	Scenarios	
	Time	
😂 Department +	👻 Project 🕂	😂 Expense 🕂
6 Levels	3 Levels -	3 Levels
1 Hierarchy +	1 Hierarchy +	1 Hierarchy +
Levels	Levels	Levels
Currency	Project	Detail
Department	Project Category	Summary
Function	Total Projects	Supporting
Facility		
Division		
Total Company		

So we can see the level structure of some of the model's dimensions. (The minus(-) compresses the detail.) If we are interested in the interactions with other models or data sources, we can expand the mappings:



		Expense	
Dimensions		Feed Mappings	Extract Mappings
Department	-	Adjust WF Mod w/Actuals -S	Accounts Payable
Expense		Archiving Expense Mod	AP Detail
Project		Automatic Sub-Account Map	EXPENSE
Scenarios		Load Actuals & Curr_Fcst fro	Update Exp Mod w/CAP Acc
Time		Map Actuals to Mar 2008 Fest	Update Exp Mod w/ Cap acc
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		patti mapping	
		Update Exp Mod w/CAP Acc	
		Update EXP Mod w/WF Acco	
		Update Exp Mod w/Distribut	
		Update EXP Mod w/WF Accounts	
		Map : Update EXP Mod w/Economic Cost	•
		Model : Workforce	+

Note that one of the feed mappings is from another model, Workforce. If you right click on the model and select "Launch a new visualization with this model", you will see a visualization of the Workforce model added to the "canvas":

			Expense -								
	Dimensions		Feed Mappings		Extract Mappings						
	Department	-	Adjust WF Mod w/Actuals -S	Accounts Payable				Workforce			
	Expense		Archiving Expense Mod		AP Detail		6 Dimensions -				
	Project.		Automatic Sub-Account Map EXPENSE			3 Feed Mappings					
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			Update EXP Mod w/WF Acco				Project		Update WF Mod w/Employe		
			Update Exp Mod w/Distribut				Scenarios				
							Time				
			> Update EXP Mod w/WF Accounts	-th			Workforce				
			Map : Update EXP Mod w/Economic Cost	+							
			Model : Workforce	4							



You can build the picture of your application to be as broad and deep as you like by adding visualizations of the relevant objects and expanding the details you want to see. The canvas is essentially "infinite" in terms of accommodating your needs.

#### **Faceted Search**

For the times when you want to see a big picture or you're just not sure where to start, the Universe offers a useful way to "shop" for the objects you want to visualize.

If you move your cursor over the magnifying glass on the left hand side of the canvas, the faceted search pane will pop out:

rchQ	011	==	1	
Current Search	AJC Expenses	- = Model		
Refine Your Search Categories (130)	Amys Model Development	Model computation model	j.	Extract Mappings Accounts Payable
JumpStart (17) System (11) Public (8) Logan Aluminum (6)	Anchor Mapping Tester	Model computation model		AP Detail EXPENSE Update Exp Mod w/CAP Acc
Project Sample (5) FMC (5) AJC (5) Booz Allen Hamilton (5)	AP Detail Source	Model source data	*	Update Exp Mod w/CAP Acc Update Exp Mod w/CAP Acc Update Exp Mod w/CAP Acc
EDC (5) (More)	BAH Labor Rates	Model computation model	-	
Level (359) Hierarchy (277) Dimension (246) DataSource (180)	BAH Overhead Rates Booz Allen Hamilton	Model computation model		
Model (130) Attribute (47) Interface Objects (773)	BAH Project Detail Booz Allen Hamilton	Model computation model	omic +	
Process Objects (749) Object Types (123)	BAH WBS Booz Allen Hamilton	Model computation model	-	
Connections From (130) 0 (5) 1 to 5 (56) 6 to 10 (30)	Bauer Revenue Bauer	Model computation model		
11 to 25 (23)     26 or higher (16)     Connections To (130)	Bauer Revenue Copy	Model computation model		
Last Touched (11)	Found 130 matching objects			



Faceted search lets you find objects of interest in the same way you commonly shop in online stores. There are all sorts of ways to shop:

- You can type a search string into the search box which will match object names or ID's (or descriptions?)
- You can select the categories you are interested in
- You can pick objects by class and/or subclass (Object Types)
- You can choose objects with a specificed number of connections to or from
- You can look for objects which have been used recently, or not touched in years
- You can do any combination of the above

As you refine your selection, faceted search will continuously update the count of the objects selected (the blue numbers in parentheses), and keep the contents of pane on the right – the matching objects – up to date.

The matching objects are displayed in groups of 20, and you can use the controls on the bottom to page through

the groups. The controls above the matching object list manage how much information is displayed about each object.

Once you have found the objects you want to visualize, you can drag them onto the canvas and start exploring. Alternatively, you can click on the object to select it (or use ctrl-click or shift-click to select multiple objects)

and click on the eye to start the visualization.

When you click back on the canvas, the faceted search pane will automatically retract.

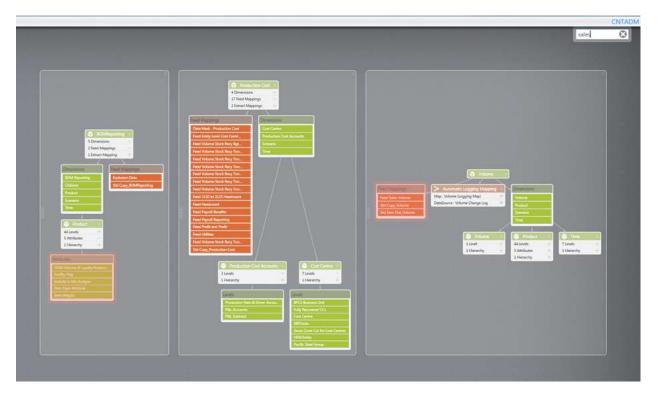
#### Exploring the Canvas

As you can see, it is easy to build up an extensive visualization on the canvas, so the Universe supplies some handy ways of navigating around:

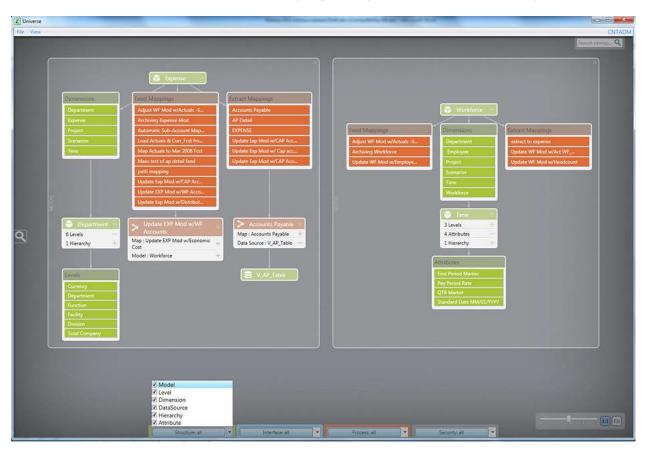
- You can pan the canvas just by clicking any unused area and dragging just like Google Maps
- You can use the sizing controls in the lower right corner:
  - The slider control grows and shrinks the items on the canvas
  - The 1:1 button restores all objects on the canvas to their default size
  - $\circ$  The Fill button scales the canvas so all visualized objects fit on your screen
- You can use the wheel on the mouse to zoom in or out from the location of your mouse pointer

If you have lots of objects on the canvas and you want to look for a particular object or set of objects, you can type into the search box and all relevant objects will be highlighted:





If you want to simplify the overall picture that you are seeing, the set of "de-cluttering" controls at the bottom of the canvas allow you to select or deselect entire groups of object classes, or individual object classes:

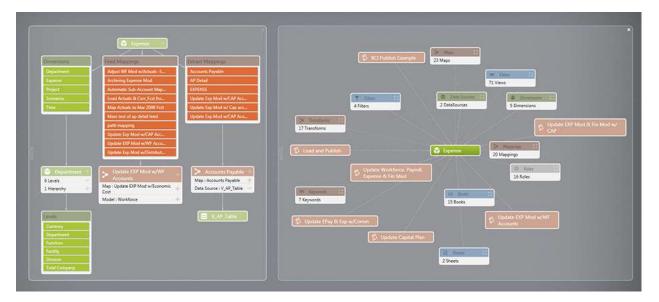




#### **Finding Objects References**

Most of the time you will use the Universe to explore the structure and interrelationships of objects, but there will be instances when you may need to know the impact of changing or deleting an object.

For those circumstances, the Universe provides an option, available from the right click menu on any object to "Show objects using this..". When we select that option for the Expense model, the canvas looks like:



So we can see that the Expense model has 71 views, 17 transforms, and 15 books using the model. We can continue expanding and exploring those objects from this new visualization on the canvas.

#### Navigating to and from CONTROL Objects

The intended purpose of the Universe is to supply a "big picture" of the parts of a CONTROL application. There are times when the overview is not enough to meet your needs, and you need to see the details.

For those occasions, the Universe gives you an option on the right-click menu for every object to "Edit this object in Control", which will launch the edit book for the selected object.

For books, views, forms and sheets, you can "Open object in Control", which flips you back into the Excel workbook with the desired book, view, etc.

From the CONTROL environment, in virtually every context where you see an object reference, the right-click menu will include a Universe option. When you select this option, the visualization of the selected object is added to the canvas.

You can move back and forth between the Universe and the Excel environment using the standard Windows technique of hovering over the Excel application in the task bar, and picking the window you want:



🗈 🖼 Keyword	Expense	27
Script	Financial Summary	28
ZTransform	Manufacturing	29
Korkflow	Max Mod 1000	30
Manifest	Max Model 9876	31
	New Model	32
D Napping	Revenue	33
Security	Revenue Copy	34
D 🙎 Role	Workforce	
Luser 2	Logan Aluminum CONTROL®	- Bookl 🛛 🕅 Universe
Category	Mallinckrodt Baker, Inc.	
🗈 🄩 Group	P Moran	
~	Moran     Object Templates	
Favorite Objects	Pacific Steel Group	
Recent Objects	Pacific Steel Group     PathFinder Internationa	
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#### **Other Universe Features**

The Universe is designed to be so simple that you needn't know much about CONTROL, Excel or financial applications in order to use it.

You can't change any part of your application, so you should feel comfortable about experimenting and exploring. Move your mouse around and click on controls when they appear, or right click and see what shows up in the context menu.

Here is a partial list of additional commands:

- Saving a visualization to a file, and opening a saved visualization
- Clearing the canvas
- Creating a visualization preview
- Coalescing all referring objects or all objects of this type
- Highlight all occurrences of this object on the canvas
- Show all references inline

One final note for administrators – the Universe can be used for rapidly prototyping new applications, as described below.

### **Enhancements for the Information Navigator**

Version 10.0 will present some important changes to the Information Navigator user, particularly in the appearance and functionality of dialogs and task panes used for selection and design. Most common navigation and data entry functions are largely unchanged from version 9.2, so that end users will be able to use version 10.0 with little instruction.



View Navigation and Customization

#### View Design Pane

The view design pane which is activated by the View Pane button on the CONTROL View ribbon has been significantly enhanced to make it more intuitive to customize the view by changing filters and branches, and quickly see the impact of any possible change:

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		_		1	-										Net Dimensions	🕰 Branches 🔢 🗄 Seorc
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	Company Ct	property Total	i = Locat	ion Location 7	otal = Pro	odurt Live - E	Wisien Produ	et Unie Tota							Product Line - Division	
CDN Ammunts Not Scaled															# Scenario	I 12 IZ I
GP Accounts	M/Y					-		-					and the second se	- 1	Scenario	
	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	M-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	-Year 2014		# Title	M/TT M/Y
300100 PRODUCT REV	1,443,737	1,483,862	2,220,849	265,896	281,840	697,111	316,693						6,709,986		Tene Fernal	and a second
300700 RENTAL REV	715,854	693,022	639,250	342,723	319,980	453,009	298,773			•			3,467,659		+ Variable	
300300 SERVICE REV	446,733	423,126	426,952	180,254	217,536	274,000	105,918			+			2.074,51.9		GF Micmans	T T
IO1000 FREIGHT REERL-SCOPE	7,543	20,089	17,158	(\$28)	2.278	6,610	(0.996)		- 1	ti-	.*.		51,234		and the second sec	M/V/TT Q/Y
303000 SHOP LABOUR	5,885	4,150	7,025	9,110	7,185	7,245	(2.750)			+::						1
101500 SUBSISTENCE - SCOPE	12,023	4,000	660			3,615				+1			23,795			2000 C C C C C C C C C C C C C C C C C C
104000 INSPECTION: SCOPE	26,756	29,851	38,436	23,024	11,512	26,193	(700)			* -			155.071			T Filters
105000 THIRD PARTY SUBRENT REV - SCOPE	75,455	109,589	138,070	75,984	31,383	78,490	32,636					- 22	543,585			UPI CURRENT YEAR
195009 REBILL OTHER	81,452	92,782	18,736	27,259	(3,814)	17,712	(5,050)	(a)		*,		2	329,077			PRCS TIME DRV
107000 MILEAGE REBILL- SCOPE	106,439	101,553	97,550	15,647	60,137	57,704	45,840			· • • •			454.829			PRCS TIME SRC
IOBOOD PARTS & SUPPLIES SALES- SCOPE	48,123	47,970	30,135	25,288	15,719	44,788				+			212,023			PRCS TIME TGT
109000 ENVIRONMENTAL CHARGE - SCOPE	25,021	26,643	21,756	11,570	9,396	14,184	(797)			- ti-			107,722			QUARTER TO DATE
111000 MISC REVENUE - SCOPE	(25)	- 1	0	0						÷.,		1.4	(24)			
380000 I/C PRODUCT REV			10,963	23,058	22,294	189,827	166,994		2.4	4 1			413,137			
380040 I/C SERVICE REV	The second second	2,757	- mili	- Constanting	- unitere			14	. 4	*	•		2,757		Constant of the second s	aller and a second s
Sales	2,995,995	3 039 393	3,667,501	1,003,567	977,436	1,870,485	955,621			+.:			14,509,967		D Pages	Columna
390000 SALES CREDITS - SCOPE	18		1.1.1.41		- Anton	(108,258)	108.258	18	- 4	4 C			The second		Company Default Branch	MAY
390100 CUSTOMER DISCOUNT		. 4			(4,752)			- 'a'	- 4		•		(4,732)		Location Default Branch	A CORPORT OF
Sales Returns and Discounts					(4,752)	(108,258)	108,258			•			(4,752)		Product Line - Division Default Branch	1
100100 SCOPE PRODUCT COGS	735,036	880,486	1,304,799	126,753	130,829	395,815	168,570			+			3,742,299			
ID1000 FREIGHT EXPENSE - REBILLARLE	1,162	9,002	13,879	1,058	1,800	2,988	**	*	- 1	- ti-			29,888			
101500 FREIGHT DOPONSE - NONREBILLABLE	32,298	22,984	35,807	16,166	12,223	25,130	6,013	· •		+			150,622			
102000 EQUIPMENT REPAIRS - REBILLABLE	3,720	7,297	26)	(668)	4,571	9,455	(9,456)	18		+0		- 18	15,183			
102500 EQUIPMENT REPAIRS - NONREBILLABLE	49,605	55,469	73,150	70,158	87,155	139,893	27,324			+ 5			502,254		Rows	Filters
IO4000 INSPECTION - REBILLABLE	30,956	15,290	22,859	13,718	15,327	16,277	(3,400)					<u></u>	91,036		GP Accounts Ad Hoc Branch (GP - P&L)	Scenario Default Branch
104500 INSPECTION - NONREBILLABLE	1,635	2,585	1,970	775	980	2,768	2,695		-	+1.			14,408		or recording reaction presch (ar ) Paul	Sectory versed branch
05000 THIRD PARTY SUBRENT - REBILLABLE	34,633	49,207	102,364	28,841	18,947	54,637	6,662			· · · · · ·		13	295,291			
05500 THIRD PARTY SUBRENT - NONREBILLABLE	6,152	77	1,606	5,972	1,0.28	4,200	+)-			+10		+	10,035			1
05600 THIRD PARTY SERVICES - REBILLABLE	25,144	59,015	6,757	(2,509)	5,256	375			2.4			1.4	80,029			
05700 THIRD PARTY SERVICES - NONREBILLABLE	6,939	15,276	6,448	3,646	877	789	7,750			•		1.8	41,725			
106000 REBILL CHARGES OTHER	32,281	21,623	6,841	776	B,465	10,465			2.4			. 4	80,451			
07000 MILEAGE EXPENSE - REBILLABLE	7,559	- 4	÷.,	200			*	(A)	- 4	*	•		7,750		Contractor and the second	
00000 PARTS & SUPPLIES SALES	19,220	(745)	(3,595)	11,883	9,081	16,546	3,697		2.4	e.:.			56/088		Properties:	
ID0100 PARTS - COATING	22,054	15,866	3,257	2,687	6,680	9,018	1,767	18		+1			61,330		and the second second	( particular of the particular
409000 SHOP REPAIR & MAINTENANCE	3.834	1.865	960	3.328	1.657								12.644		Immediate update	Update Max

Selecting a branch by checking the adjacent box, dragging and dropping branches to or between edges or onto the worksheet continues to work as in version 9.2.

What is new:

- Branches can be displayed as graphical images or as a simple list controlled by the buttons above the branch list
- All pre-defined filters for a dimension are shown for non-custom dimensions, and can be selected by using the adjacent check box or by dragging the filter onto the branch in one of the edges boxes
- You can see and update all the properties for a dimension-branch by clicking on the expander \* at the bottom of the task pane and selecting a branch



Dimensions		🕰 Branches		Search
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<ul> <li>Organization</li> </ul>				
Company				
Location				
Product Line - Divis	sion			
<ul> <li>Scenario</li> </ul>		<b>T</b> Filters		
Scenario		- ruters		
Time Time Period				
Time Period	-			
Pages		Columns		
Company Default Branch	Ú.	M/Y		
Location Default Branch				
Product Line - Division D	efault branch	1		
Rows		<b>Filters</b>		
Rows GP Accounts Ad Hoc Bra	nch [GP - P&L]	Filters Scenario Default	Branch	
GP Accounts Ad Hoc Bra			Branch	
GP Accounts Ad Hoc Bra		Scenario Default	Branch	
GP Accounts Ad Hoc Bra		Scenario Default	Branch	
GP Accounts Ad Hoc Bra Properties:		Scenario Default	Branch	
GP Accounts Ad Hoc Bra Properties: IE IA Search ID		Scenario Default	Branch	×
GP Accounts Ad Hoc Bra Properties: IE IA Search ID		Scenario Default	Branch	×
GP Accounts Ad Hoc Bra Properties: IE IA Search ID Definition	DB04	Scenario Default	Branch	×
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GP Accounts Ad Hoc Bra  Properties:  I  D  Definition Dimension Branch Filter	DB04 Location (ID: Default Brand (ID: ALL)	LOCATION)	Branch	
GP Accounts Ad Hoc Bra  Properties:  ID  Definition  Dimension  Branch  Filter  Detail	DB04 Location (ID: Default Brand (ID: ALL)	LOCATION)	Branch	
GP Accounts Ad Hoc Bra  Properties:  ID  Definition Dimension Branch Filter Detail  Display	DB04 Location (ID: Default Brand (ID: ALL) ALL	LOCATION)	Branch	
GP Accounts Ad Hoc Bra  Properties:  E Search  ID Definition Dimension Branch Filter Detail Display Edge Edge Sequence	DB04 Location (ID: Default Brand (ID: ALL) ALL Page	LOCATION) ch for Location (ID: )	Branch	



- There is now a single "Immediate Update" check box which allows you to make multiple changes in the ٠ design pane without regenerating the view. (Defer Carve option is handled in version 10.0 with the Sample Only option on the view ribbon, discussed below.)
- ٠ Checking a branch of an organization dimension that is already in the view, changes the branch of the dimension, rather than adding an additional branch. (Dragging the branch to an edge will add the branch.)

#### **Page Selection**

The page selection dialog has been subtly enhanced:

🚧 Page Selection						- • •
Page Dimension Br	anches					
Project Expense Page Members Full Time Equiva	Expand Compress	•	Search			٩
Total Employee Travel & Entertain	Sort	•				
Supplies & Services Communications & Freight & Shipping Occupancy Other Charges Total Operating Exp Payroll Exp Adj Map Employee Other Adj Payroll Tax Exp Adj M Employee Benefits A Employee Pension A Expenses - Non-sala Pretranslation Translation Fx Rate	t IT penses ped Mapped Mapped dj Mapped dj Mapped	ed				
				ОК	Apply	Cancel

Changes to note are:

٠ Each dimension-branch on the page edge of the open view is represented in the dialog by a dimensionbranch command button just like on the open view.



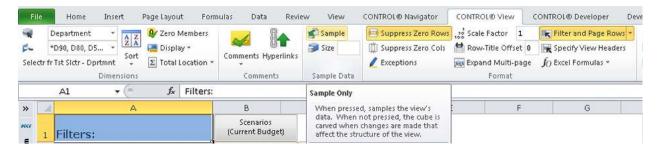
- Like on the open view, you can right click on the buttons representing the dimension-branches to perform expand, compress and sorting functions on each dimension branch
- A Search box is available to deal with long lists of page members
- The Apply button allows you to quickly flip through pages without dismissing or minimizing the dialog

#### **Other Navigation and Customization Changes**

One of the critical design themes of version 10.0 is to make experimentation easier and less intimidating for the user, and to show the impact of any changes as quickly as possible – no matter how much data is involved.

To these ends, version 10.0 introduces the following enhancements:

- No fail view opening if a view cannot be generated due to some problem with its definition an incorrect filter, a missing dimension of the model, etc. the view will still open and there will be a message about what the problem is, and an indication that the view data is incomplete
- Sample Only and Sample Size new options on the CONTROL View ribbon allow the view to be defined and navigated with a minimal amount of data, so all operations occur very quickly, even on very large and complex models



- Navigation Behaviors Selector style filters and custom dimensions may have user-defined parent/child structure, so that expand, compress, and drill operations will respect those definitions.
- Replacement for View Design Dialog all options of the open view are now available either through the view design pane, the View ribbon, navigation, or the view property dialog launched from the CONTROL Navigator ribbon

#### Filter Wizard

Changing a filter within a view or any other context has been enhanced extensively. This is the new filter/branch wizard dialog:



Ad Hoc	•	Selected members:		Search 🔎
Ad Hoc				
		Name	ID	
	Search O	Jan 2009	200901	
	Seuren P			
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		15 · · · · · · · · · · · · · · · · · · ·		E
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	JUMPSTART           re Periods         ALLFUTUREPERIODS           Month         CURRENTMONTH           IT QTD         CURRENTQTD           Year         CURRENT_YEAR           IT YTD         CURRENT_YTD	In this MAXMONTHS A MAXMONTHS IN TESTTIMEFILTERKW JUMPSTART IN CURRENTON THE INTEGRAL IN TESTTIME IN THE INTEGRAL IN TESTTIME IN TESTIME IN TESTTIME IN TESTIME INTO INTEGRAL INTEGRAL INTEGRAL INTO INTO INTEGRAL INTO INTO INTO INTO INTO INTO INTO INTO	ID Mar 2009 Mar 2009 1Q09 Apr 2009 JUMPSTART May 2009 JumpsTART May 2009 Jum 2009 Jun	ID     ID     Apr 2009     200902       withs     MAXMONTHS     1Q09     200903       ine Filter KW (Keyword)     TESTTIMEFILTERKW     JUMPSTART     May 2009     200905       JUMPSTART     JUMPSTART     May 2009     200905       Month     CURRENTMONTH     ZQ09     200906       JUI QTD     CURRENT_VEAR     ZQ09     200907       Year     CURRENT_VEAR     YUD9     200907       Air 2009     200907     Aug 2009     200907       Aug 2009     200908     Sep 2009     200909       Ser OUP     200903     200907       ar     NEXTYEAR     ""     ""

Filters and selectors have been merged to be two styles of filter:

- Filters are defined by an expression which is a logical set of conditions on one or more levels of the dimension. You specify the expression and the list of members is determined based on those conditions and the selected branch. As members are added or deleted from a dimension, the member list will automatically be adjusted.
- Selectors are defined by creating an ordered list of members, selected from a branch of the dimension. You can specify the order and the parent/child structure of the list. If new members are added to a dimension, they will <u>not</u> be added to the selector.

On the Predefined sub-tab, you can review all saved filters for the current dimension. A preview of the members of the highlighted filter is displayed on the right hand side of the dialog.

On the Ad Hoc sub-tab, you can use the levels and member list to construct a filter by dragging and dropping one or more members into the expression box:



	Branches		•	Totals: Dimension Default		Filter O Select
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				Name	ID	o contra
Predefined	Ad Hoc			Jan 2008	200801	
vailable Me	mbers:			Feb 2008	200802	
evel	Attributes			Mar 2008	200803	
Months		Standard Date MM/01/YYYY Pay Period Rate	8	1Q08	20081	
	First Period N	Marker		Apr 2008	200804	
✓ Quarte				May 2008	200805	
Yea	irs			Jun 2008	200806	
50.0 <i>21</i>		And an appropriate		2Q08	20082	
ars		Search	Q	Jul 2008	200807	
Vame		ID	*	Aug 2008	200808	
(ear 2007		2007	E	Sep 2008	200809	
(ear 2008		2008		3Q08	20083	
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(ear 2010	C	2010		Dec 2008	200812	
(ear 2011	Year 2008	2011	-	4Q08	200812	
G	Year 2009 Year 2010	m,	2		m	•
pression	Treat 2010		201			
	Provide the second second second	he current filter expression with the selection				

You can also construct a filter expression by launching the formula wizard (*fx* button):

	YR &NEXT_YEAR, 2008
$f_x$	
Jx	ormula wizard

The formula wizard lets you construct complex expressions on multiple levels of the dimension:



Expression wizard on filter Next Year			
			e
$f_x$ Years (ID: YR)	•	• &NEXT_YEAR, 2008	8, 2009, 2010
🖲 And 🔘 Or 🔲 Negate			B
$f_{\chi}$ Quarters (ID: QTR)	• =	• 20073	×
And Or Negate			B
(YR @NEXT_YEAR, 2008, 2009, 20	10) AND (QTR 20073)	<u>.</u>	
			OK Cancel

Defining Ad Hoc selector style filters in version 10.0 is very similar to defining selectors in version 9.2 - you drag the desired members from the available member tree (on the left) into the selected member tree on the right:

Hierarchy: Time	()	Totals: Dimension Default		🔿 Filter 🛛 🔘 S	electo
Branch: M/Q/Y		Selected members: X A V		Search	Q
Predefined Ad Hoc		Name	ID		
Available Members:	.h. I≣ <b>1.</b>	Jan 2009	200901		
Available members.		Feb 2009	200902		
	Search 🔎	Mar 2009	200903		
Name	ID	1Q09	20091		
▲ Year 2007	2007	Apr 2009	200904		
▶ 1Q07	20071	May 2009	200905		
D 2007	20072	Jun 2009	200906		
▶ 3Q07	20073	2Q09	20092		
₽ 4007	20074	Jul 2009	200907		
4 Year 2008	2008	Aug 2009	200908		
4 1Q08	20081	Sep 2009	200909		
Jan 2008	200801	3Q09	20093		
Feb 2008	200802	Oct 2009	200910		
Mar 2008	200803	Nov 2009	200911		
₽ 2008	20082	Dec 2009	200912		
▶ 3Q08	20083	4Q09	20094		
► 4Q08	20084	Year 2009	2009		
4 Year 2009	2009				
4	Ш				
xpression	*	uin			



(Normal n version 10.0 you can use the available member tree to define filter expressions as well – just click on the button.)

You can select a branch from either the drop down branch control on the Member Filter tab:

Member filter	Branches								
Hierarchy:	Time Period							•	Totals: Last 🔻
Branch:	M/Y							•	Selected members
Predefined		Ţ	Ŧ	Ŧ	Ŧ_	-	Ţ		Name Jan-14
Available M	1 1	1	Ţ.	<u> </u>	-	of Days in Ye	_		Feb-14
Level	M/Q/Y/TT M/Y	M/TT	QM	# of Days in Month	# of Days in Yea	II M	M/Q/Y		Mar-14
Mont	I	-	-	T	-	100		<b>T</b>	Apr-14
	-	1000	-	-	-	100		100	May-14
4 Qu	First Period Marker	NIN Y/TT	M/Y/TT FI	rst Period Marker	# of Days in Year	# of Days in N	lonth	Y	Jun-14
							10007012	63	Jul-14
	-	1	-	and a					Aug-14
Month	1	-	-	-					Sep-14
	# of Pay Periods in	Total Time	ALL LEVELS	AD HOC					Oct-14
Name	Month								Nov-14
Jan-06				200601					Dec-14
Feb-06				200602					Year 2014
Mar-06				200603					

Or you can select a pre-defined branch or create an ad hoc branch using the branches tab:



lember filter	Branches														
							3								
								II Search	_	-					
TT/V/Q/M	M/Y	млт	QN	# of Days in Month	₽ of Days in Year	Щ. М	MIQIY	First Period Marker	¥/17	млулт	First Period Marker	# of Days in Year	# of Days in Month	¥	
of Pav	Total Time		AD HOC												
Branch													100 %	0	- (±
							Yea								
							Contraction of the								
							Qua	ter							
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me							Month Attributes ( 4 # of Pay Per First Period # of Days in # of Days in	) ods in Month Vlarker Month Year							
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ame 4 Year ≠ Quarter							Month Attributes ( 4 # of Pay Per First Period # of Days in # of Days in	) ods in Month Vlarker Month Year							+
Year							Month Attributes ( 4 # of Pay Per First Period # of Days in # of Days in	) ods in Month Vlarker Month Year							

The visual presentation of the dimension makes it easy to define the branch by simply checking the levels and attributes you want included.

#### Transform Wizard

The functionality of the transform wizard is largely unchanged in version 10.0, but the interface and the user experience is greatly improved.

The transform wizard now occupies a pane on the right hand side of an open view, rather than being in a modal dialog. You can perform various functions and see the impact on the view's data without having to close the dialog, so you get immediate feedback on the impact of your transformation.

When initially launched, the transform wizard presents a menu of options:



Note:		8	. C	ð	t	1	G	1.161	8.	3	ĸ		- 14	N 1	0 P	0	1.201	* Transform -			
BigleS:       Discretion:       Discretion: <thdiscretion:< th=""></thdiscretion:<>	ilters:																	Select Transform	Function		
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Land Enginement     4/02     6/06     2/11     7/21     10/08     10/08     10/08     2/237     10/05     81.30       Land Englohung     2/34     1.06     1.03     2/237     10/05     81.30     10/25     81.30       Cont     50/08     2/34     1.06     1.02     2/237     10/05     81.30       Cont     50/08     2/36     1.02     1.02     1.02     1.02     1.02     1.02     1.02       Send     3.07     2/30     1.03     1.02     1.02     1.02     1.02     1.02     1.02     1.02     1.02       Send     3.07     2/30     1.03     1.02	Rent-Lease Buildings		5,892	5,584	6,879		7,952		2,705		1,041	8,571		63,243				that rely on hysorical data to excitant 5.4.4	typefinia and Literationals	in a view or model by address subtractions	deta from source data
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Hite-Suppler     11,111     0,102     6.949     17,908     17,44     8.40     1.080     1.08     2.005     1.1,202     9.1,200     9.1,200     9.1,200       sequents-Supplers     9,055     1.0,255     5.103     1.022     5.203     1.021     1.021     1.024     1.025     1.025     5.103     1.021 <td></td> <td>-</td> <td>-</td> <td></td> <td></td>																		-	-		
computer Seguencia         11.781         3.702         6.232         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.22         10.96         10.26         10.96         10.26         10.96         10.26         10.96         10.27         10.96         10.26 <td></td>																					
Unixeting Singlein         9.055         10.026         5.100         12.236         5.200         8.91         9.501         10.256         9.925         9.930           rath Insurance         2.300         2.301         5.51         9.514         4.314         2.505         9.930         9.930           rath Insurance         2.300         6.736         5.541         4.2455         8.505         9.201         9.736         9.504         4.737         4.930           rath Insurance         2.300         6.736         5.641         4.210         5.801         2.211         4.930         4.930         1.937         4.930           retail formance         2.83         5.641         4.210         1.841         1.833         1.123         1.1430         7.739           stability formance         2.201         5.621         2.211         9.206         1.331         4.930         1.333         1.123         1.1430         7.739           stability formance         1.201         0.201         0.201         0.201         0.201         0.201         0.201         0.201         0.201         0.201           stability formance         1.202         0.201         0.201         0.201         0.20																					
Supplies         40.00         24.07         58.07         40.07         24.07         28.07         27.08         29.04         49.18         26.05         26.07         47.70																		19. C			
Multi Manuscie         2.399         4.90         5.405         7.009         9.316         5.404         5.404         1.819         4.040         5.406         1.807         0.407           Multi Min Information         6.80         0.24         1.807         9.316         3.107         1.812         1.807         1.907         0.407           ental Min Information         8.80         0.24         1.807         1.812         1.102         1.102         1.102         1.102         1.102         0.107           ental Min Information         2.85         1.307         6.417         1.308         6.108         1.303         1.120         1.140         7.779           Multi Min Information         1.256         6.447         1.239         8.102         1.121         1.120         1.140         7.719           Multi Min Information         1.256         6.447         1.239         6.103         1.237         1.207         2.44         9.31         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103         6.103<																					
Jushi ha fung Camibashan         6,890         9,274         11,877         9,779         9,181         3,170         1,681         1,021         1,142         0,779           He Industrate         2,799         5,707         5,708         5,106         5,116         1,310         1,103 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>																					
ented Hamannee 2,845 1,267 6,17 8,296 6,649 2,269 3,164 1,313 11,50 11,253 11,269 11,469 77,719 Hensanzee Ladding Marcanee 1,259 5,467 1,358 10,487 1,159 8,17 1,224 13,48 11,58 1,57 1,596 1,57 1,469 1,57 1,57 1,569 1,57 1,57 1,57 1,57 1,57 1,57 1,57 1,57																					
Defensione         2.79         5.707         3.78         10.082         11.098         8.844         12.244         4.348         11.536         9.337         9.205           substrytherscare         12.25         546         4.77         12.99         57.22         59.08         6.301         13.97         9.205         13.378         19.375           substrytherscare         12.241         59.04         7.027         9.208         6.00         2.021         2.902         6.301         1.302         4.505         7.164           sumance-fload         4.74         5.59         6.973         9.208         6.00         2.021         2.902         6.301         7.102         4.505         7.164           sumance-fload         4.74         5.596         9.701         1.218         6.01         1.202         1.201         7.101           sumance-fload         4.41         5.596         5.501         1.202         1.203         1.201         7.101           sumance-fload         4.42         5.556         5.512         5.516         5.521         5.516         5.512         5.516         5.512         5.516         5.512         5.516         5.516         5.516         5.516																					
Buddly         Big         6,407         12,205         9,90         6,10         13/6         4,911         15/27         2,441         9,014         6,103           sussers-Hold         1,21         1,007         7,707         9,202         4,000         1,027         2,441         9,014         6,103           sussers-Hold         4,74         6,105         6,09         977         7,277         9,202         4,001         2,027         3,219         6,001         1,027         2,441         9,014         6,103         manage-Hold         6,107         6,001         1,027         2,401         9,014         6,103         1,004         manage-Hold         1,012																					
namace-bladby 2,246 1,249 2,211 9,077 7,277 9,228 8,40 2,201 2,972 3,29 8,40 4,296 7,564 manace-bladby 2,215 1,210 1,217 7,705 manace-bladby 2,215 9,216 1,217 1,																					
maraneer-Bood 4742 6-5079 608 975 9730 12,276 800 12,205 12,306 6231 5,927 14,00 12,025 12,00 12,00 12,02 12,00 12																					
maranee-060 402 402 222 2136 9.077 40.58 12.235 12.235 12.218 11.227 10.51 10.007 8.09 8.09 11.273 10.50 1 Maranee 4247 55.56 17.97 64.04 17.550 57.56 19.54 19.54 19.550 57.21 40.551 52.212 45.550 52.212 45.56 52.212 4 fadd Lyneme 51.240 70.00 10.79 14.201 15.00 13.930 10.204 10.754 11.558 12.2251 12.277 13.5840 14.0501																					
Insurance         42,47         55.50         47.97         64.984         75.50         57.30         59.30         59.30         59.31         62.312         45.996         50.312         62.335           total Spenne         101,240         70,600         100.799         120.900         120.900         120.900         120.901         120.912         120.901         120.911         120.901         120.901           total Spenne         101,240         70.007         102.901         120.912         125.901         125.912         125.011         127.971         130.400         1.440.901	murance 080																				
UnitDeparator         503,240         76,609         100,779         103,800         103,900	- Insurance																				
Net Operating Septeme 103,240 78,659 108,779 145,20 151,960 129,760 130,824 107,574 115,742 122,621 112,773 138,549 1,440,961	Istallapene																				
	Net Operating Expense																				
	Net Operating Expense after Allocation		78,600	108,739		151,980	129,760		107,574			112,773	138.849	1.440.961							
	Net Operating Expense after Allocation																				
	K Sheet] Sheet2 Sheet3 E	COR Op Ex E	ladaet Rev	www.rba						(J.)								-			

The appearance has been simplified, and is customized to present only the relevant options for each type of transformation, so transforms are far less intimidating than they have been in the past.

For example, the Load and Spread transforms offer a gallery of profiles:

Transform -					×	»
🚵 Load	•					
Select Profile						
Growth	Accounting	Decreasing	Increasing	Naidas Pattern		
	**********	Specified Weighting				
Peaking	Valleying	Pattern				

Copy has a set of buttons which select the content types to be copied:

Transform -			
🔄 Сору	•]		
Select Content			
Data	Comments	Sub-Accounts	

The random function (useful for generating test data) has a 2-element slider for the low and high values:



Transform -	× >
🔀 Random 🔹	
Specify Range	
-1,000	1.00
-1,000 to 1,000 •	Q
Start = 0	Stop = 589

And all the forecast transforms have been consolidated, and clicking on the desired method lets you specify the options that are relevant:

Transform -					× »
K Forecast		•			
Select Method					
Average	Median	Trend	Polynomial Fit	Exponential Fit	
Forecast PR	0				
▼ ForecastPR					
Select Method:					•
Additional	Expert Trar Quick Expert				
► Target Data	Rox-lenking	nkins			- 1
Modify Dat	a Exponential Sm	oothing			
Example: *.05,	1/2, Simple Moving	ential Smoothing Average			

The target data selection is initially based on the cells in the view that are selected when you open the transform wizard.:



		× >
< Random		
Specify Range		
-1,000 to 1,000	(	1.00
Start = 0	Stop = 622	
Additional Transform Information		
▼ Target Data		
Target Data View Model		
	Туре	
View Model	Type Organization	
View Model Filter	Land Street Stre	
View Model Filter AJCFAMILY MONICA	Organization	1000

You can customize the filters by:

- Launching the filter wizard by clicking the "..." next to the dimension
- Selecting a different set of cells on the worksheet

Filters set using the filter wizard are identified with a check mark:

View	Model		
Filter	4ł	Туре	
AJCFAMILY MONICA		Organization	
CURR_BU	D	Scenario	
YR 2010		✓ Time	
AJCEXPEN	ISES CATS	Variable	

If you set a filter with the wizard and then select cells on the worksheet, CONTROL will let you decide which filter you want by clicking on the little "i":



View Model		
Filter	Туре	
AJCFAMILY MONICA	Organization	
CURR_BUD	Scenario	
YR 2010) AND QTR 20103	0 Time	
A ICEVEENSES MORTGAGE CARS FOOD I	ISLIBANCE ELIPHITUPE HO Variable	

elect either to keep currer	t filter or edits from Excel
Current: (YR 2010) AND QTR 2010	03
From Excel: MO 201001 201002 2010	03 201004 201005 201006 AND YR 2

To see the impact of your transform on the open view, there is a new "Transformed" template style, which can be used to highlight the changed values:

Filters:	Scenario (Budget)													
Pages:	Operating Unit Department (EPCOR Water 5.) (Maintenance)													
•	EPCOR Open	- 1		2										
C	Scenario Bud		e truck op	ex budget i	review									
COMPANY NAME Company Stepse	Operating Un	it Epcor Wate	er Services In	c :: Dep	artment Main	tenance								
CDN Amounts Not Scaled		8												
	M/Y								100					
Epcor Expense Accts	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	-Year 201	
Rent-Lease Buildings	1,752	5,892	5,584	6,879	11,159	7,952	7,158	2,705	1,861	1,041	8,571	2,689	63,243	
Rent-Equipment	4,762	6,846	2,431	7,231	2,771	10,480	1,633	10,488	11,326	10,219	2,517	10,625	81,325	
Rent-Rags&Rugs	2,524	1,490	9,038	5,841	7,744	8,039	2,011	1,529	10,863	11,622	8,516	7,503	76,72	
-Rent	744	Contract of the second	14,228	17,053	19,951	21,674	26,471	10,802	14,722	24,050	22,882	19,604	20,817	221,292
Repairs-Bldg			1,891	7,159	8,130	9,331	9,709	10,586	1,417	1,949	11,645	1,340	11,637	75,538
Repairs-Equipment	2,979	2,459	1,103	4,580	11,323	8,704	11,312	11,612	8,628	6,903	10,019	7,849	87,471	
-Repair	3,723	4,350	8,262	12,710	20,654	18,413	21,898	13,029	10,577	18,548	11,359	19,486	163,009	
Supplies	4,601	2,208	7,221	11,840	5,789	1,427	7,350	9,682	668	10,298	6,027	11,979	79,090	
Office Supplies	11,294	2,243	670	738	148	452	8,957	9,187	9,562	8,219	2,688	8,782	62,939	
Office Supplies It	11,331	6,101	6,964	7,908	11,388	7,743	8,407	1,880	3,196	2,805	11,392	12,184	91,299	
Computer Supplies-It	11,781	3,092	6,257	3,985	8,012	9,108	10,281	10,402	419	2,005	3,696	5,533	74,571	
Marketing Supplies	9,055	10,826	5,163	12,256	5,209	895	4,546	9,190	10,780	5,552	12,211	9,255	94,938	
-Supplies Health Insurance	48,062	24,470	26,275	36,727	30,546	19,625	39,541	40,341	24,625	28,879	36,014	47,733	402,837	
	2,599	4,933	5,495	7,009	9,196	546	4,091	1,819	4,043 544	6,566	1,866	1,317	49,480	
Health Ins-Emp Contribution Dental Insurance	6,880	9,724	11,683	7,759	9,191	3,170	1,681	3,065		1,803	1,032	11,447	67,979 78,789	
Life Insurance	3,815	1,267	6,147 926	8,206 10,082	6,494	2,250 8,844	3,162 12,241	1,511 4,348	11,503	11,925 9,517	11,059 9,965	11,450	89.328	
Disability Insurance	12,205	5,672	926 8,487	10,082	11,909 9,712	9,093	8.819	4,348	11,526 4,911	9,517	9,965	9,014	89,320	
Insurance-Liability	2,816	1,368	8,487	9,027	7,337	9,093	8,819	2,021	2,972	3,339	2,441	4,256	71,664	
Insurance-Liability Insurance-Flood	6,741	6.879	698	9,027	9,793	9,220	8,400	12,021	12,390	6,538	1,932	4,230	78,765	
Insurance-D&O	4,602	4,732	2,150	9/5	8,018	12,176	12,188	11,327	8,621	10,697	8,810	11,173	104,030	
-Insurance	4,602	35,561	47,797	64,894	71,650	57,540	58,583	39,482	56,510	52,312	45,796	50,813	623,355	
Total Expense	103,240	78,609	99,387	134,282	144,524	122,049	130,824	107,574	115,762	122,621	112,773	138,849	1,410,493	
Net Operating Expense	103,240	78,609	99,387	134,282	144,524	122,049	130,824	107,574	115,762	122,621	112,773	138,849	1,410,493	
Net Operating Expense after Allocation	103,240	78,609	99,387	134,282	144,524	122,049	130,824	107,574	115,762	122,621	112,773	138,849	1,410,493	



There is now a Test button that will verify that the transform is correctly specified and if so, the number of data values that would be affected.

#### Accessing the Universe

The CONTROL Navigator ribbon now contains a Universe button:

File H	lome	Insert	Page	Layout	Formulas	Data	Review	View	CON	ITROL® N	avigator	CONTROL	© View	CONTRO	OL® Develo	per Develop	per Add-Ins	Team
Login Logout	B Ex	AJC penses *	Books	Views	<ul> <li>⑦ Refresh +</li> <li>⑦ Regenerate</li> <li>∭ Solve +</li> </ul>	Select	File Data *	Forms	Sheets	Scripts	Transforms	Menu Pane	View Pane	Ö Tasks	<b>%</b> Universe	Keywords	Doptions	
Login	M	odel 🐨	Books		Views		5	Forms	Sheets	Scripts	Transforms	Shov	//Hide	Workflow	Display	Configuration	Options	
C13	3	• (	9	fx 1	495.9711										Show Un	liverse		

This launches the Universe with a visualization of the most "relevant" model or object – typically based on the open view on the current worksheet.



### **Enhancements for the Administrator**

The enhancements in version 10.0 are designed to make the administrator's job easier, more efficient, and more satisfying.

If you are familiar with the Object Manager, you will find that all of the functionality exists in version 10.0, but it is much quicker to navigate to the objects you need, navigate between the objects, make changes and see their impact before you commit them to the database, and to save or cancel on a wholesale basis.

Version 10.0 offers a choice of editing object content using custom controls in a task pane or using the contents of specially structured object views on the Excel worksheet, or a combination of the two techniques.

Since you probably have extensive amounts of data and meta-data in Excel worksheets, you may find that it is simple to copy and paste into an object view to create new levels, hierarchies, codes, etc. Once your structures are initially built, it may be easier to use the task pane to make modifications and refinements. The choice is yours.

#### Enhancements Affecting All Objects

#### **Changes to Object Subclasses**

All objects which have more than a single subclass now must have a specific subclass. New subclasses are:

- Computational and Administrative Models
- Computational and Administrative Views
- Control-Control, Control-External, External-Control, and External-External Maps
- External, Control-Managed, SQL Query, and Generated SQL Data Sources
- Program Scripts
- Form with View
- Menu Template Sheet
- Static and Dynamic Menus
- Control Feed, External Feed, Control Extract, and External Extract Mappings

These changes are intended to make it simpler to create and organize your application and eliminate irrelevant and confusing options. Where necessary, the new subclasses will be assigned to existing objects as part of the database upgrade process.



### **Object Templates and Dedicated Objects**

The idea behind object templates is to provide a buffet of options when you are creating something new. By picking the right template as the starting point for your new object, you won't need to make as many changes and your application will be up and running faster.

For example, you may frequently create models that use common time and scenario dimensions, so you can select the template which already has those dimensions assigned.

As you see common patterns, you can add new object templates. Object templates are no different from other CONTROL objects, except they are placed in a special access category called "Object Templates", or in any grouping subcategory of that access category.

When you create a new object based on an object template, you may want the new object to have copies of its components. For example, many variable dimensions for simple applications contain a single level which is only used in that dimension. This is an example of a "dedicated object" – the level is dedicated to the dimension.

Dedicated objects have the following characteristics:

They have a Reuse Behavior of Dedicated rather than Reusable

Identification		
Name	AG Map Rates	
ID (	AGMAPRATES	
Class	Map	
Subclass	0 Control-Control	
Category	900 Development (ID: 900DEVELOPMENT)	
Description		
Definition		
Map Content	Model Data	
Target (	AG Revenue (ID: AGREVENUE)	
Source or Destina	AG Rates (ID: AGRATES)	
Transfer Direction	Write	
Structure		
Has Custom Members	False	
Has Organization De.		
Logging Accessibility		
Hidden		
Owned By	Administrative User (ID: CNTADM)	
Shared By	(None)	
Reuse Behavior	Dedicated	
Dedicated Object	AG Map Rates (ID: AGMAPRATES)	
Miscellaneous		
Dedicated Object Miscellaneous use Behavior		



- They have a property showing what object they are dedicated to, referred to as their parent object
- When their parent object is copied or selected as an object template, the dedicated object is copied and the copy is automatically given a name and ID based on the new object, and it is placed in the same category as its parent
- When the parent object is deleted, the dedicated object is deleted, provided it's Reuse Behavior has not been changed
- A dedicated object may have its own dedicated objects and when it is copied, its dedicated objects are copied in a recursive fashion
- Dedicated objects can be hidden or visible it is the administrator's choice

There are a number of cases where you might find it useful to have dedicated objects:

- Levels belonging to a dimension
- Dimensions belonging to a model
- Maps, roles, or codes belonging to a mapping
- Filters belonging to a role or a view

You should find that having a library of object templates with dedicated objects will reduce the number of steps and the time it takes to build an application.

### **Dynamic Views and Books**

Experience with a broad spectrum of application scenarios has surfaced the concept that there are very useful configurations of standard CONTROL presentation mechanisms for a number of different contexts.

For example, when you are validating the definition of a transform, it is very helpful to see the target data, source data, and pattern data in different views, collected into a book. The definitions of the views and the book can be derived from the transform.

Dynamic views and books deliver the useful information for these contexts, without requiring a user to do all the work of building the objects.

### Dynamic Views

Two properties define a dynamic view:

- A Dynamic Behavior other than "Static" indicates that the book or view structure will be programmatically determined
- The Dynamic Definition is a text string which specifies which dynamic view or book option and generally specifies the target object. Keywords are allowed and are resolved in the current user and selected model scopes.



dentification		0
Name	Transform Target (Dynamic)	
ID	TRANSFORMTARGETDYNAMIC	
Class	View	
Subclass	Computational Views	
Category	Development (ID: DEVELOPMENT)	•
Description	Mapping Target	
Кеу	18420	
Scopes Defin <mark>i</mark> tion		0
Auto Generate Form		
Base Model	(None)	•
Dynamic Behavior	DefineOnOpen	•
Dynamic Definition	TransformTarget(Transform(&CurrentTransform))	
Enhanced Level Data		
Form Info	(None)	•
Frozen Data		
	fined by its saved filters, branches, etc., DefineOnOpen if the definition is generated by CONTROL when the view is enerate if the definition may also be changed when the view is regenerated.	initially opene

The currently supported dynamic view options are:

- MappingTarget(mappingID) Target data of the mapping based on the filters in the target data access role, for mappings whose target is a computational model.
- MappingSource(mappingID) Source data of the mapping based on the filters in the source data access role, for mappings whose source is a computational model.
- MappingErrors(mappingID) All Error log entries for the mapping.
- TransformTarget(transformID) Target data for the transform.
- TransformSource(transformID) Source data for the transform, for transforms whose source is computational model data.
- TransformDriver(transformID) Driver data for allocation transforms which use selected factors or drivers.
- TransformPattern(transformID) Pattern data for load or spread transforms which use a specified pattern.
- MapTargetExternal(mapID) Target data for External-Control or External-External maps.
- MapTargetModel(mapID) Target data for Control-Control or Control-External maps.
- MapSourceExternal(mapID) Source data for Control-External or External-External maps.



- MapSourceModel(mapID) Source data for External-Control or Control-Control maps.
- MapTargetObject(mapID) Primary object data (e.g. level members or hierarchy rollups) for a metadata map.
- CustomDimension(dimensionID1[,dimensionID2,..]) Computational view making use of one or more custom dimensions and the remaining base dimensions of the target model.
- HierarchyRollups(style) Generally useful content and filter for hierarchy rollup data based on the subclass of the hierarchy and dimension structure. Style may be "Tree", "Table", or "Choose". If style is omitted or set to Choose, the style will be selected based on the subclass of the hierarchy.
- ObjectMetaData(component) Generic object view for any component
- MapObject Object view for the source or target of a Map
- SampleData Computational view with sample data for a model
- ObjectSecurity(objectID) Administrative view on the CONTROL Object Security model for a specified object
- UserObjectSecurity(userID) Administrative view on the CONTROL Object Security model for a specified user
- DataSecurity(objectID) Administrative view on the CONTROL Data Security model for a specified model, data source, or hierarchy
- UserDataSecurity Administrative view on the CONTROL Data Security model for a specified user.
- JobStatistics(scriptID) Administrative view with the statistics for all jobs running that script.
- Role(roleID) Computational view based on the read filters of a data access role.
- RoleRead(roleID) Computational view based on the read filters of a data access role.
- RoleWrite(roleID) Computational view based on the write filters of a data access role.

Note that dynamic views are opened with a model or object scope, so to use the view effectively you must open it with the appropriate model or object.

You can expect the list of available dynamic view options to grow as new useful scenarios are identified.

#### Dynamic Books

The same two properties that define a dynamic view define a dynamic book:



Identification	0
Name	Mapping (Dynamic)
ID	MAPPINGDYNAMIC
Class	Book
Subclass	Looseleaf
Category	Public (ID: PUBLIC)
Description	
Key	18461
Definition	0
Dynamic Behavior	DefineOnOpen -
Dynamic Definition	Mapping(&CurrentMapping)
Is Edit Book	False
Structure	0
Book Structure	Binary
Is Onfile Scope	True
Sheets Are Linked	
User Scope	All Users (ID: All Users) -
	etermines how the book content will be defined when the book is open. Options include Mapping, MappingDefinition, Transform type of dynamic book is followed by the ID of the desired object - e.g. Mapping(UnitMapFromERP)

The currently supported dynamic book options are:

- Mapping(mappingID) Target data view, source data view, and optional mapping error log
- MappingDefinition(mappingID) Source data view for map definition (with the map task pane), target data view, source data view, and optional mapping error log
- Map (mapID) Source data view, security, and changes
- Transform(transformID) Target data view, source data view when appropriate, pattern or driver data view when appropriate
- EditObject(objectID) Creates the default collection of views for editing each class of object

#### Universe Prototyping

The Universe is not only designed to let you visualize the structure and interrelationships of objects in existing CONTROL applications – it also lets you quickly lay out the foundation for new applications as well.

With the Universe visible, simply right click on any blank area of the canvas, and select File, New Prototype, and Model:



File	New Prototype		Model
100	Open Save	· • 1	
	Save	- x	

A special model visualization will be created on the canvas:

	🜍 New Model	
Dimensions Var Tme Scn Org	Extract Mappings	Feed Mappings
Var Tme Scn Org	3	Add

To add an existing dimension to the new model, select the dimension from the faceted search pane, and drag it to the dimensions node:

Search	• 2	to the			
Current Search inucture Objects Dimension Ibject Types Scenario	Scenarios JumpStart	Dimension scenario			
ategories JumpStart					
Refine Your Search	I .				
Categories 04 Development (II) Devide (I) Project Sample (I) System (I) Ø JumpStart (I) ★ Structure Objects (I)			Scenarios Jungitar		
Dimension (1)			Dimensions	Extract Mappings	Feed Mappings
<ul> <li>Interface Objects (9)</li> </ul>			Unitensions	Extract mappings	reed mappings
Process Objects (7)			Var Tme Scn Org	Add	Add
Object Types (28)     Organization (1.2)     Variable (10)     Custom (4)					J. [
Scenario (1)					

To add a new dimension to the model, click on the sub-class button (Var, Tme, etc.):



	New Model			
Dimensions	Extract Mappings	Feed Mappings		
Var Tme Scn Org	Add	Add		
Scenarios				
Time				

To add a level to the new dimension, by clicking on the + button next to the dimension name to expand, and then click on the Add button in the Levels node:

			😚 New Model	
	Dimensions	-	Extract Mappings	Feed Mappings
	Var Tme	Scn Org	Add	Add
	Scenarios			
	Time			
	New Variable	Dimension <del>-</del> 🛅		
	😂 Ne	w Variable Dime	ension —	
Levels	H	ierarchies	Attributes	
Add		Add	Add	

You can:

• Change the name of a new object by clicking on the name and typing the new name



- Remove a subsidiary object by clicking on the trash can icon
  - Drag existing objects of the appropriate class and subclass into the new nodes
- Expand and collapse nodes using the + and buttons as you are working on different parts of your prototype
- Drag nodes to a new position

Once you are satisfied with the definition of your new model, right click on the model node, and select Commit to CONTROL:

				🛟 Example Un	iverse Prototype	*
			Dimensions		Extract Mappings	Feed Mappings
			Var Tme	Scn Org	Add	Add Mapping from AP Data
			Scenarios Time			Source
DDFI			Prototype Vari	ables		
			Prototype Org	anization		
		😂 Prototype Variables –			Prototype Organizat	ion —
	Levels	Hierarchies	Attributes	Levels	Hierarchies	Attributes
	Add	Add	Add	Add		
	Detail		(	New Prototype Org		
l		/				

All the new objects will be added, and you can use the various edit books to flesh out the details, test, and refine your design.

The intent of the Universe prototyping function is to let you very quickly build the main structural components of an application, demonstrate and evaluate how well it suits your needs, and then refine it and keep it, or discard it and start over.

As this feature is enhanced in this and future releases, the hope is that CONTROL applications can be constructed and delivered in dramatically reduced time frames.

### **Specific Objects**

### Model

Model definition is functionally little changed from the CONTROL version 9.2. The primary task pane and worksheet are shown below:



Filters:	Scenario (Actuals)											· · ·				
	1000000															
Pages:	Vantage Entit (Logan Internat		e Depart. ment Tot.)	(Division Total)							Available C	imensions	-	III II Sean	ch	
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Terryon Dear	Vantage Entity L	ogan Internatio	nal loc #S/A	/antage Departn	nent Departme	ist Total 💷 . Vi	antage Division	Drivision Total			Attorney			Codes	Variables	
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	M/Q/Y/TT										-			- 2	- <b>-</b>	
Vantage Accounts	-Year 2014	-Q1-14	Jan-14	Feb-14	Mar-14	-Q2-14	Apr-14	May-14	Jun-14		AG Revenue	88 - Copy -	Blank	Company	Currency	
Sales	1,409,236,497	437,934,203	50,755,890	267,439,610	119,738,703	971,302,294	412,097,600	249,782,309	309,422,384		And mercinite	Models	Dimension	company	contency	
Cost of Sales	792,092,677	263,684,525	41,059,547	157,013,197	65,611,781	528,408,152	231,522,339	104,126,532	192,759,281			1000222	2000			
aross Profit	617,143,821	174,249,678	9,696,343	110,426,413	54,126,922	442,894,142	180,575,262	145,655,777	116,663,103		-		-	-	-	
Payroll	147,896,944	81,885,722	24,933,949	22,180,512	34,771,261	66,011,222	22,171,270	21,254,364	22,585,588			-				
Payroll Tax	33,841,381	6,193,494	99,877	5,890,026	203,591	27,647,887	70,030	68,121	27,509,736		The set of the second					
Expenses	37,606	18,894	6,787	7,592	4,515	18,711	7,650	3,749	7,313		Used Dimer					
G&A	22,548,952	2,929,701	1,008,980	1,246,171	674,550	19,619,251	16,757,370	858,813	2,003,069		Scenario			Organization		
Commissions	746,953	457,014	152,387	140,957	163,671	289,938	98,990	90,881	100,067					1		-
Contract	3,594,205	2,294,587	774,858	787,266	732,464	1,299,618	802,726	45,490	451,402		Z -			<b>Z</b>	I . I	
Depreciation	4,037,159	2,019,527	673,480	674,480	671,567	2,017,632	672,756	673,668	671,208						-	
Amortization	1,866,652	931,710	302,706	301,830	327,174	934,942	302,378	303,181	329,384		Scenario				intage Vantag	
Auto	16,834,108	8,411,942	2,807,490	2,811,052	2,793,400	8,422,166	2,807,894	2,806,584	2,807,689					Entity De	epartment Division	5
Bad Debt	31,272	19,104	(11,463)	70	30,497	12,168	(13,630)	(813)	26,611		Variable			Time		
Travel & Entertainment	9,571,948	3,423,975	205,062	3,116,182	102,730	6,147,973	4,023,481	2,060,674	63,819		Valiative			10100		
Marketing	350,615	141,959	51,717	59,782	30,460	208,656	79,578	48,615	80,463		-			I I		
Telephone	5,570,199	2,818,065	782,852	1,035,924	999,289	2,752,134	848,260	852,806	1,051,068		-			-		
Utilites	73,320	\$4,462	19,857	18,000	16,605	18,858	(4,349)	8,143	15,064		Vantage			Time Period		
Professional Fees	76,431,474	46,456,883	7,870,195	19,679,407	18,907,280	29,974,591	1,258,887	9,183,999	19,531,705		Accounts					
401k	1,166,315	1,027,735	898,677	47,581	81,477	138,580	49,233	45,625	43,722		Contraction of the local division of the loc			<u>.</u>		_
Rent	30,907,062	15,912,294	4,431,893	7,142,552	4,337,849	14,994,768	4,958,074	5,045,541	4,991,153		Vantage Dir	asion				
Repair	53,736	26,178	9,028	4,937	12,213	27,557	10,153	6,952	10,453							
Supplies	319,600	167,563	43,391	47,146	77,026	152,037	62,625	46,699	42,713		Hierarchies	Properties				
Insurance	13,362,688	10,791,779	624,287	9,556,134	611,358	2,570,909	610,229	982,666	978,014		Filter/Scenar	0	Hierarchy	/Keyword		
Deferred FIT P&L							all an				# All Scena	int:	Vantan	e Division		
Federal Income Taxes	11,511,682	(7,049,425)		1,283	(7,050,707)	18,561,107	10,107		18,551,000		0.0000000000000000000000000000000000000					
Gain Loss on Disposal	(21,857)	33,726	(2,246)	(1,639)	37,611	(55,583)	(45,595)	(9,988)			Actua	l Backup	Click he	re to specify hier	archy or keyword	
I/C CIS	(0)	(0)	(3,504)		27,123		÷.		1		PRCS	SCN for FCST (	tes Click he	re to specify him	archy or keyword	
I/C Interest Income/Exp	(0)	(0)	(14,961)		0	*		28								
Other	22,501	41,127	(923)	51,564	(9,514)	(18,627)	4,844	7,444	(30,915)		Forec	ast	Click he	re to specify hier	archy or keyword	
State Income Tax	27,497					27,497	27,497	•			Actua	8	Click he	re to specify hier	archy or keyword	
Tax	829,025	411,818	134,030	142,270	135,518	417,206	136,211	144,292	136,703				10	and the second state		
Tax Provisions	(967,483)	(968,586)	1,341	1,714	(971,641)	1,103	(3,992)	2,436	2,659		have been a second					
Interest Expense	1,412,657	757,230	340,527	169,196	247,507	655,427	222,207	225,867	207,352		ALL ST. SALES	12			[	
Model Structure	101 marchard					- marine			10.000.000	1	Immediate	update			Update N	Aaximia

Available dimensions can be dragged and dropped from the upper part of the taskpane to one of the four boxes in the center to add a dimension to a model. As the dimensions are added, the sample view on the worksheet will show you how a view on the model will look, and that view can be rotated, expanded, drilled, etc.

To explore available dimensions, you can select a dimension in the upper or middle section of the task pane and and the dimension's properties will be displayed in bottom of the task pane.

This pattern of interaction is common to many of the objects in version 10.0

The definition of hierarchies has been simplified. When you select one of the model's dimensions, you will see the hierarchy which is associated with each pre-defined scenario filter, or with a specific scenario on the Hierarchies tab:



Asset Asset Class Department Project		
Time	icenario	Organization
Time		21 - 2 <b>1</b>
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Time		1 1 1 I I I I I I I I I I I I I I I I I
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	Hierarchies Properties Filter/Scenario P Actuals P Budget	Hierarchy/Keyword Click here to specify hierarchy or keyw Click here to specify hierarchy or keyw
	Hierarchies Properties Filter/Scenario P Actuals P Budget	Hierarchy/Keyword Click here to specify hierarchy or keyw Click here to specify hierarchy or keyw
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	Hierarchies Properties Filter/Scenario P Actuals P Budget	Hierarchy/Keyword Click here to specify hierarchy or keyw Click here to specify hierarchy or keyw

To associate a hierarchy with a scenario or scenario filter, simply click in the right hand column and pick the desired hierarchy, or a keyword which specifies a hierarchy.

The model ribbon (visible when the model's edit book is the active book) provides access to secondary information about the model, such as security, storage, and change history:

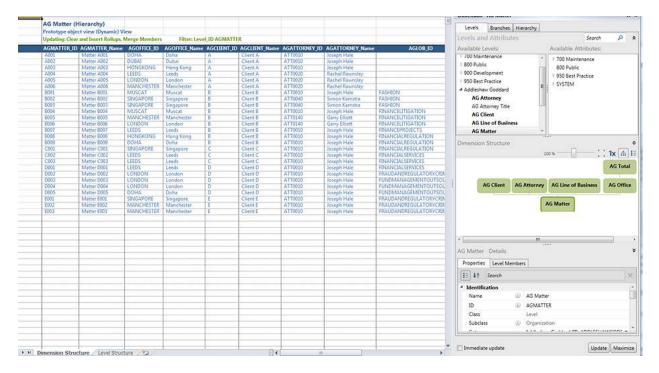
<b>X</b>	ち・ ち・ か・ *	States in case of	and the second second				-	Capit	Capital Model - CONTROL®							
File	Home Insert	Page Layo	ut Formulas	Data Review	View	CONTROL® Nav	igator (	CONTROL® VI	ew CONTROL® De	reloper	CONTR	OL® Model	Developer	Add-Ir	ns Tea	sm
Name	Capital		Single Currency	S€ Currency	US Dolla	ws *	1		100 ->		E .			(		-
ID	CAPITAL		Multi-Currency	Translation Map	Standar	d Translation Map										
Subclass	Computational Models		Exchange Rate	Exchange Rate	Exchang	e Rate Model	Properties	Pane	Dimensions Mapping		t Data Access	Storage Chang	es Universe	Save	Discard Changes	
	Model Info		Currency Type		Currency		Properties	Show/Hide	Construction		Main	tenance	Display		Model	



### Dimension

The dimension edit book is designed to provide a single point of interaction for building and maintaining a dimension and its hierarchies.

The dimension is constructed by dragging and dropping levels and attributes from the top section of the task pane into the dimension structure chart:



Dropping a level onto another level will create a reporting relationship to the added level, and a new parent box will appear above the target level. Dropping an attribute on a level in the dimension structure will specify that members of the target level have that attribute, and the attribute will be added to the list of attributes within the level's box in the chart.

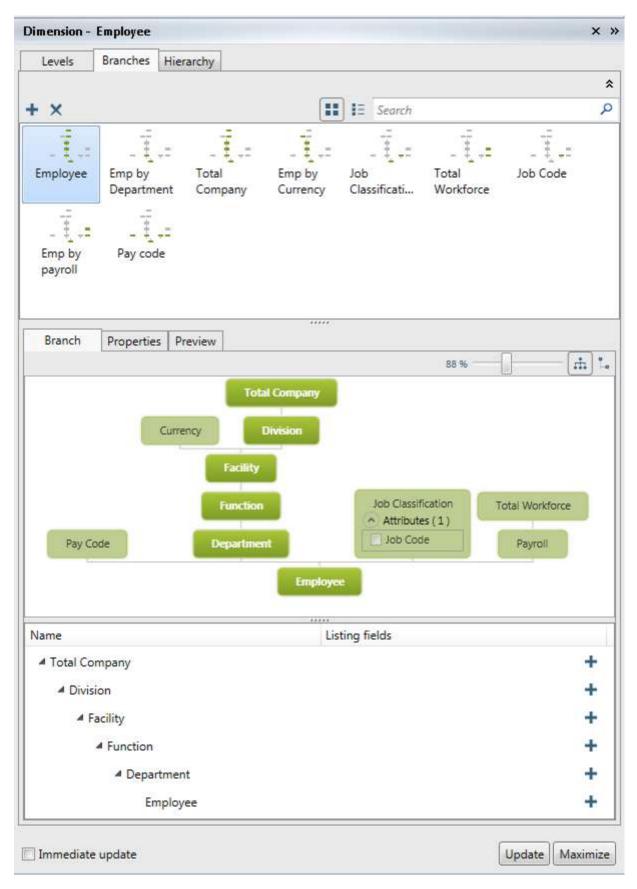
The dimension structure chart is a graphic representation of the dimension that will be used throughout CONTROL wherever a dimension can be selected.

Clicking on a level or attribute in the dimension structure chart will display the level's members or properties on the tabs bottom section of the task pane.

The worksheet contains an object view on the standard hierarchy of the dimension.

The branches tab allows the maintenance of defined branches for the dimension, and uses the dimension structure diagram to visually highlight the levels which comprise each branch:







You can define a new branch by clicking on the plus (+) button above the list of branches, then by moving your mouse over a level and clicking on the check box, which will add the level to the branch. The selected levels are highlighted in center section of the task pane, and the tree of selected levels is presented at the bottom of the pane.

You can add listing levels and attributes to the branch by clicking on the plus (+) next to a level and selecting the desired level or attribute.

▲ Levels	-
Currency	
Division	
Total Company	
<ul> <li>Member Properties</li> </ul>	
Description	
DirectLogic	=
HierarchySequence	
IsHidden	
ID	
LevelKey	
LevelSequence	
LowestLevelFlag	
MemberKev	1

You can change the branch name and ID on the properties tab, and see a preview of the branch for the hierarchy which is selected on the hierarchies tab by choosing preview.

### **Custom Dimension**

The experience of creating and maintaining custom dimensions has been significantly improved in version 10.0, and there are a number of very useful functional enhancements as well.

The custom dimension edit book is composed of a task pane for maintaining custom members and a view which renders the custom dimension on the worksheet.



	Home Insert Page Layout Formula	s Data Ri	eview Vie		US Navigator	CONTROLO		ROLS Develo	course a	Dimension Developer Ad	did-Ins Te	am	a 🕜 =	
6	udget Analysis S Base Mode UDGETANALYSIS CCCIII Operation	og Express Totals	Properties	Dimension	Mappings Ob	ect Storage C	0	. 8	Discard Close					
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	Commissions							1	Variance				CURRENTYEA	
	Contract	_							Forecast	(None)		(None)	FORECASTVA	
	Depreciation	-							Variance %				CURRENTYEA	AKS
	Amortization Auto	-		-	-									
	Bad Debt	-		-	-		-		-					-
	Travel & Entertainment	_		-	-	-			141			Ū.		100
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19 +		-			-							ATIF3: Budget What-If 3		
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The view is initially presented with Sample data selected, so that the view refreshes very quickly to reflect changes in the custom dimension definition. De-selecting "Sample" on the CONTROL View ribbon will render the view with valid data

The dimensions of the base model are represented graphically in the lower left of the task pane, and the base dimensions are selected by clicking in the check box adjacent to the dimension thumbnail. Clicking on a base dimension will cause its hierarchy members or pre-defined filters to be displayed on the lower right. (Note that in version 10.0, there is no longer a restriction on the number of base dimensions in a custom dimension.)

The list of custom members occupies the top of the task pane, and new members can be added with + key above the list.

To define a custom member, drag a member or filter from lower section and drop it on the custom member.

Alternatively, when the Properties tab is visible on the bottom, you can define the filters, formulas, or any other property of the custom member:



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me	Scenario	Time Period	Formula
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Variance %	(None)	(None)	VARIANCE/ CURRENTYEARB
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A formula wizard is available to create complex formulas for custom members.



Custom dimensions may now have a hierarchical structure of members, which is respected in view navigation operations such as expand, compress, drill and undrill. Use the "Add child member" button to add a new custom member as a child member of another custom member.

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Right click on a custom member to change its place or level.

Name		Scenarios	
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Actual as 9		Move down Promote Demote	

Version 10.0 contains a number of improvements to expandable custom members:

- Both filter and selector mode filters can be used to define expandable members
- For filter mode, if the branch definition has multiple levels, the branch structure is incorporated into the custom dimension, so that navigating the dimension (expand, compress, drill) is consistent with navigating a base dimension with the same filter and branch
- For selector mode, the user-defined hierarchical definition is incorporated into the custom dimension for the same reason
- Expandable members can be defined to expand with a total member, so it is easy to see the summation of values selected by the filter
- ID, Name, and Formula patterns can be set independently, so that you can specify the ID and Name of the total of the filtered member, as well as the structure for the ID's and Names of the expanded members

The ability to define expandable custom members combined with the use of custom dimensions in mappings has led to very creative and interesting applications of these features.

One of those applications is in mapping combinations of base dimensions (e.g. Cost Center and Account) to a single base dimension (e.g. Profit and Loss Account). To support complex definitions which may be maintained



in another application – a report writer or a General Ledger – CONTROL version 10.0 supports mapping of custom dimension definitions, both feed and extract.

### Hierarchy

The hierarchy edit book offers two alternative mechanisms for maintaining hierarchies – via an object view on the Excel worksheet or with custom controls in the task pane.

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The object view allows you to use standard Excel features (copy/paste, extend, etc.) to define the hierarchy. CONTROL automatically embeds Excel validations to help select reporting relationships and will insert an Excel comment with an explanation if you make an invalid entry.

The task pane allows you to select a level from the dimension diagram in the lower left section, and choose members of the level in the lower right to drag into the rollup tree in the upper section, which can be displayed in either tree or table mode.

You can build formulas by using the formula bar and then clicking on members in the tree to include them as operands:



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Or you can create complex formulas by using the formula wizard

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You can review and edit all the member properties on the properties tab:



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The Usage tab shows you all models that the hierarchy's dimension is used in, and which hierarchies are used for the models' scenarios:



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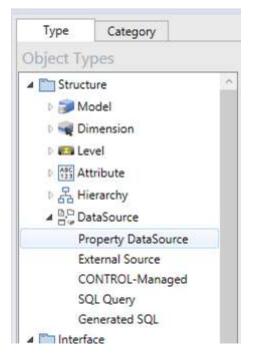
### **Data Source**

With every release since the introduction of CONTROL version 8.0, it has been increasingly apparent that integration with other applications and systems is one of the most valued and powerful features of the product. Clients across industries have integrated with ERP and CRM systems, data warehouses and marts, custom applications – both large and small scale, and other reporting, dash boarding, and business intelligence tools. Consultants and customers have taken advantage of CONTROL's ability to create, manage, and manipulate relational data in ways that were never envisioned in the original design.

In version 10.0, data Sources have undergone significant enhancements to keep up with the next generation of challenges.

Most importantly, data sources are now organized by subclass, which distinguishes how the data source is created and managed:





- Property Data Sources are created by CONTROL to support the selection of properties in object views. Generally these need minimal maintenance for example setting the style for a column.
- External Sources are created and managed by a non-CONTROL application. These tables or files cannot be altered by CONTROL processes. For example, a table from your General Ledger or Data Warehouse, or a file from your CRM system.
- CONTROL-.Managed sources are tables or files which are created and managed by CONTROL itself. For example, extract files and logging tables. There is a new Modification Rule property which controls whether the data source can have its structure altered, its content changed, or both.
- SQL Query sources are relational queries against other data sources, either external or CONTROL.
- Generated SQL data sources, as in version 9.2 let you create relational views of CONTROL data and meta-data, which is suitable for consumption by other applications typically reporting and Business Intelligence tools.

The Data Source edit book presents a view of the data source's contents on the primary worksheet. The Sample Only option of the view is helpful when dealing with very large data sources to prevent retrieving large amounts of data.

The accompanying task pane will vary in content depending on the subclass of the data source.

#### Explorer Tab

The explorer tab is available for both External and SQL Query data sources.



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This tab lets you quickly explore existing data sources, tables, and files:

- The left pane presents existing data sources and either relational tables and views or files, depending on the type of data source
- When you click on a data source, table, view, or file, its columns are shown in the upper right pane
- When you click on a column, you can see the unique values of the content of the column in the lower right either a sample or a comprehensive set, depending on whether the Sample Only box is checked
- For file based data sources, the Browse button in the lower left lets you look for the desired file using the standard windows file explorer

#### Columns Tab

All data sources will have a columns tab in the task pane:



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rim Leading Spaces you want special handlin	g of leading spa	aces in the entries in t	his column, specify it here	



The list of properties for each column has been enhanced in version 10.0 to support common content transformations such as handling extraneous or embedded blanks, converting dates, etc. These transformations apply when the column is used in a feed or extract mapping or in a source data view.

### SQL Query Tab

Version 10.0 dramatically simplifies the process of creating SQL Queries and delivering the results in Excel. After you have selected one or more tables or views on the explorer tab that you will be querying, you can construct the query by dragging and dropping columns into predefined areas in the lower part of the task pane:



Explorer Columns SQL Query		
ables and Columns	Sample Data 🛛 🐼 Sam	ple Onl
<ul> <li>CNTADM.Lev_CONTROLCATEGORY</li> <li>Member_Key</li> <li>Member_ID</li> <li>Member_Name</li> <li>Member_Description</li> <li>Sequence</li> </ul>		
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You can switch between the Tree View of the query (useful for building with drag and drop) and the text view (useful for copy/paste) by using the control at the top of the query box in the task pane.

Click on the Update button or check the Immediate update check box to see the query results.

#### Other Enhancements

The data source types have been unified to include the various supported databases and file types:

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ID	TBL GP_TRANSACTION
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Subclass	External Source
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Definition	
Column List Type	Predefined
Data Base	
Data Source Type	HomeDataBase
Data Table	(None)
Content	ODBC
Has Access Roles	SQLServer Oracle
Has Attribute Values	Svbase
Has Codes	Informix
Has Hierarchy Rollup:	UDB
Has Level Members	GeneratedsQL
Has Model Data	Access Vertica
Has User Info	HomeDataBase
	CSV File
Processing Delimiter	Tab-delimited File
	Fixed Record Length File
Header Lines	1
Keep Login	
Keep Table	
Query	
File Time Stamp	
Reload Table Rule	Always Reload

Note that the "HomeDatabase" option has been introduced so that data sources can be migrated across data base types (e.g. from SQL Server to Oracle) without modification.



To help users turn useful lists they have built in Excel into relational tables that can be queried and manipulated, CONTROL-managed data sources have a "Derive from Worksheet" option on the ribbon:



Simply create a new CONTROL-Managed datasource, and either enter column titles and sample data or copy/paste data from an existing spreadsheet, then click the Derive from Worksheet button. CONTROL will examine the content of the worksheet and create a set of column definitions for the datasource. You can then use the task pane to modify those definitions.

To simplify the use of external data sources that are provided as files, there is a new Reload Table Rule, which allows you to specify that CONTROL will automatically turn the file into a relational table whenever the file has been changed.

#### Views

The view design pane changes have been discussed previously in the context of the information navigator. The configuration of dimension-branches, edges, and filters is identical for the administrator.

Select a scope			*	Commensions	T Filters
L Users	Search 🔑	Models	Search 🔎	I Custom	
All Users		All Models		# Organization	
Administrative User		Computational Models     200 Logan     800 Public     900 Development     800 Public		AG Client Scenario Scenario Time Time Period Variable GP Accounts	
elect the active scope		l.	¥	D Pages	Columns
Jser Scope		Model Scope			Time Period Default Branch [YEAR TO DATE]
All Users		EXMP - Payroll			
VI Users		EXMP - Payroll Remainder	1		
II Users		EXMP - Payroll State Code			
I Users		EXMP - Payroll Workers Comp		Rows	T Filters
II Users		EXMP • Payroll Yearly • Rate		GP Accounts Default Branch	Scenario Default Branch
ll Users		EXMP - Workforce		GP Accounts Detault Branch	AG Client Default Branch
Il Users		EXMP - FTE			
Il Users		Great Plains			
			1.		
ope Properties:		****	*	Properties:	adaba

However, the administrator has improved facilities to deal with views having multiple scopes. The Scopes button on the View Designer ribbon launches a dialog that lets you review, modify, and add or delete scopes:

On the left hand side of the dialog, you can select user and model scopes in the upper pane and drag them into the list of used scopes in the lower pane.



When a scope is selected, the dimension-branch definitions appear on the right hand side of the dialog, in the same format as the view design pane. The properties of each branch are available in the lower right, and the general properties of the view scope are available on the lower left:

Select a scope			¥	📲 Dimensions		🛱 Branches	II Search	3
Select the active :	scop	e.	¥	1 Custom		1		
+ ×				<ul> <li>Organization</li> </ul>				
User Scope		Model Scope		EXMP - Employe				
All Users		EXMP - Payroll		EXMP - Payroll S	tate Code			
All Users		EXMP - Payroll Remainder	1	* scenario		T Filters		
All Users		EXMP - Payroll State Code		4 Time		1.1.1.1		
All Users		EXMP - Payroll Workers Comp		Time Period				
All Users		EXMP - Payroll Yearly - Rate		and an an an an an and a second		Columns		
All Users		EXMP - Workforce		Pages		and the second s		
All Users		EXMP - FTE				Time Period Default Br	anch [YEAR TO DATE]	
All Users		Great Plains						
All Users		Vantage						
All Lleave		Encor Financials						
			×	Rows		7 Filters		
cope Properties:			*	Payroll Account Defau	it Branch	Scenario Default Branc	h	
1E 14 Search				Sci Payron Account belaut branch		EXMP - Employee Default Branch		
Identification						EXMP - Payroll State C	ode Default Branch	
Name	30	Prototype	1					
ID		PROTOTYPE	100					
Class		View		Properties:				
Subclass	(5)	Computational Views		11 +7 Search				
Category		(None)						
Description		Prototype view used as a basis for creation of new views		Identification				
Scopes				Name	Scenario Default Branch			
Is Onfile Scope		True		ID	D801			
Is Primary Scope		8		Definition	a			
	3	EXMP - Payroll State Code (ID: EXMP_PR_ST_CODE)	+	Dimension	Scenario (ID: SCENARIO)	100		
Model Scope				Branch	Default Branch for Scenario (ID	23		

### Filters

The major change to filters is the merger of filters and selectors, and has been described previously. The filter task pane is identical in structure to the filter wizard dialog, without the branches tab.

One of the design goals of version 10.0 was to bring more of CONTROL's analytic flexibility to more casual users. Creating a library of pre-defined filters for commonly used dimensions can help achieve this goal.

#### Forms

The form task pane follows a standard pattern, with available dimensions and branches selectable in the top section, to be dragged and dropped into the list of selected panes in the center of the task pane.



1		Form - Select Time + Scen	ario	× »
1	Select Time + Scenario	Panes Commands	1	
3 4 5	Current Month:	Dimensions:	II I S	<b>☆</b> Search
2 3 4 5 6 7 8 9 10 11 12 13	CY Budget Scenario:	Crganization Crganization 200 Logan 700 Maintenance 800 Public 900 Development 950 Best Practice 4 Addleshaw Goddard	AG AGRate Attom Code	
13 14 15	NY Budget Scenario:	AG Attorney	)	
16		× • •		\$
17	Save Refresh Help Close	Branch A Time Period (M)	Type Pane	
18 19 20 21 22 23 24 25		Month <ul> <li>Scenario (Scenario) Scenario (Scenario) Scenario</li> <li>Scenario (Scenario) Scenario</li> </ul>	Level Pane Level Level Pane Level	
25 26 27		Pane Item Properties		×
28 29 30		IE \$ Search		×
30		<ul> <li>Identification</li> </ul>		
31 32 33 34		Name	Time Period (M)	
33		ID	TIMEPERIOD	E
34		Description	Current Month:	
35		Pane Number	1	_
35 36 37		Dimension	Time Period (ID: TIMEPERIOD)	• •
38 39 40			Update	ximize

When you drag and drop a branch, the grouping levels of the branch automatically define the selection levels in the form, and the listing levels of the lowest branch levels automatically define the additional member properties.

The details of the form control for each level or attribute can be defined in the property grid at the botton of the task pane. Click the Update button to see the form rendered in the worksheet.

The Commands tab of the form task pane follows the same pattern, with available commands in the upper section, selected commands in the center, and command properties on the bottom.



Panes Commands				_
Command Type:		Search		1
Standard Commands		▶ 200 Logar		1
Computational Views		▶ 700 Maint		_
Source Data Views		4 800 Public		
Object Views	Ξ.		nge Rate Model	
1			MP - View Navigation 1	
Administrative Views			MP - Scenario Comparison change Rate Entry	
Q Forms With Views			ototype	
Forms Without Views			MP - Create Forecast	
i Sheets			ototype view for Sample Data	
× • •				;
Command	Command T	ype	Caption	
Save (ID: Save)	Standard Co	ommands	Save	
Refresh (ID: Refresh)	Standard Co	ommands	Refresh	
Help (ID: Help)	Standard Commands		Help	
Close (ID: Close)	Standard Co		пер	
Close (ID: Close)	Standard Co		пер	
Command Item Prop			nep	
		ommands	nep	
Command Item Prop	erties:	ommands	пер	
Command Item Prop		ommands	nep	
Command Item Prop	erties:	ommands	nep	]>
Command Item Prop	erties: Help	ommands		]>
Command Item Prop Search Identification Name Description Definition Command	erties: Help Help (ID: He	ommands		×
Command Item Prop Search Identification Name Description Command Command Type	erties: Help Help (ID: He Help	ommands 		]>
Command Item Prop Search Identification Name Description Definition Command	erties: Help Help (ID: He	ommands 		]>



The options for form commands have been expanded, and are consistent with options available in scripts, books, and menus. They include:

- Standard Commands such as Save, Refresh, and Help
- Opening views of all subclasses
- Opening forms, with and without views
- Opening Sheets
- Running Transforms
- Running Mappings
- Running Scripts
- Opening Books

#### Books

The book task pane follows the common pattern of selectable items (views, forms and sheets) at the top, selected items in the center, and the properties of the pages at the bottom:



Book - Basic Budget Examp	le			× »
				*
Selected Content:		Search		Q
Computational Views		I AJC		~
		▷ Bauer		
Source Data Views		▷ Bellevue		
🙀 Object Views		▶ Bel-Ray		
Administrative Views		Booz Allen I	Hamilton	
A Forms With Views		▷ BCI ▷ CompX		
		Consonus		
Forms Without Views		Developme	nt	
Sheets		₽ EDC		
		+ <b>EMC</b>		¥
X ^ Y				٥
Content	Туре		Model or Data Source	
Basic Sample	Com	putational Views	Expense	
Employee Selection	Form	ns With Views	Employee Payroll	
Employee Payroll Forecast R	eview Com	putational Views	Employee Payroll	
Capital Entry by Asset Class	Form	ns With Views	Capital	
Expense Review I	Com	putational Views	Expense	
Book Item Properties:				¥
I∃ ↓ <sup>A</sup> Search				×
Auto Open				~
Object View Component	(None)			4
Dont Resolve Keyword				
Meta Object Info	Employee Payroll	Forecast Review (ID: FMPI	LOYEEPAYROLLFORECSTRVW)	
Display				
Worksheet Tab Name				
Hidden				
Display Task Pane	(None)			Ψ.
Task Pane Component	(None)			~
Task Pane Target	(None)			•
Initial TP State	Normal			* .
Immediate update			Updat	te Maximize
			90%	+

The most important enhancement to books is the ability to associate task panes with pages of the book. You can specify:

• Display Task Pane – None, Display, or Leave Existing task pane visible



- Task Pane Component The component of the target object presented in the task pane for example, a level's members.
- Task Pane Target The target object
- Initial Task Pane State Normal, Minimized, Maximized, or Hidden

Using these properties, you can tailor edit books to suit the needs of specific users and application scenarios.

#### Menus

The creation and maintenance of menus has changed significantly in version 10.0. Menus are now first class objects which appear in the object navigation pane.

All of the common functionality of objects now applies to menus:

- They can be organized in categories and subcategories
- They are governed by standard object access roles
- Their references can be visualized in the Universe
- They are automatically adjusted for deletion of objects they include, such as views, books, forms, and scripts
- They can be stored, restored and snapshotted
- Their changes can be logged and audited

The previous custom dialog for creating menus is no longer supported and menus are created and edited like other objects, with an Edit book and a their own task pane.



Menu - Nick Menu			× »
			*
Selected Content:		Search	Q
Computational View	vs	▶ FMC	*
Source Data Views		▷ Global Sources	m
C Object Views		▷ Hilton	760
Administrative View	5	✓ JumpStart	
Forms With Views	Ĕ	Financial Summary	
Forms Without View	ic .	Financial Review I	
Sheets		TEST-MTD-YTD Income Statement Report General Analytic	
		Balance Sheet Adjustment	
Run Transform		Balance Sheet Review	
Run Mapping		P & L Consolidation	
Run Script	*	Balance Sheet Consolidation	*
+ × ^ ×			\$
Name	Туре	Description	¥
A Common Views	туре	Description	
Joyce's View			
AJC Sample			
AJC Bad Filter			100
Workforce Review	v I		
Bauer Demonstra			
Row Comment In			-
1		m	
Expand Dynamic Entrie	5		
Menu Item Propert	ties:		×
[∃] ↓↑ Search			×
4 Identification			
Name	Common Views		
Description			W
Key	101523		
Group	(None)		
<ul> <li>Definition</li> </ul>	1 ACCOUNTS		
Is Group	True		
Is Dynamic			
Immediate update		Update	imize
			0000000



The task pane follows the common pattern with available options at the top, selected items in the center, and the detailed properties of the selected menu items at the bottom. The set of available menu items has been expanded to include transforms, mappings, object views and administrative views.

Version 10.0 introduces the concept of a dynamic menu and a dynamic menu item. If you would like to have CONTROL automatically create a menu structure of all the views on a particular model in a specified category, all you need to do is specify the model and the category, and as new views are added (say month-end reports), the menu will reflect those additions without any additional maintenance! If the specified category includes subcategories, the menu will optionally be created with groups representing those categories.

I∃ ↓↑ Search		×
Identification		
Name	Max Dynamic	
ID	MAXDYNAMIC	
Class	Menu	
Subclass	Dynamic	
Category	Development (ID: DEVELOPMENT)	
Description		
Key	18203	
Definition		
Action Type	Computational Views	23
Dynamic Category	Booz Allen Hamilton (ID: BOOZALLENHAMILTON)	
Dynamic Object	BAH Project Detail (ID: BAHPROJECTDETAIL)	
Include Categories		
Tree Hierarchy	Category, Model	
Structure		
Representation	MenultemTree	
Display		
Title		
Style Sheet	(None)	
Logging Accessibility		
Miscellaneous		

Here is an example of a dynamic menu and its expanded structure:



.....

Menu - Max Dynamic		×		
Selected Content:	Search	ز		
Computational Views	▷ AJC	Ē		
Source Data Views	Bauer			
	Bellevue			
Object Views	Bel-Ray			
Administrative Views	Booz Allen H	amilton		
Q Forms With Views	▶ BCI			
Forms Without Views	CompX			
🚳 Sheets	De Consonus			
Run Transform	Development	t.		
	▷ EDC			
Run Mapping	▷ FMC	L		
🕢 Run Script	Giobal Source	es		
Book	Hilton			
Static Menu	JumpStart			
C. Dynamic Menu		<ul> <li>Logan Aluminum</li> <li>Mallinckrodt Baker, Inc.</li> </ul>		
	and the second sec			
Run Macro	D Moran			
+ × ^ ×				
Name	Туре	Description		
BAH Project Detail				
Project Sample	Computational Views	Basic View for Navigation Demons		
BAH Profit Issue	<b>Computational Views</b>	Prototype view used as a basis for		
BAH Form Sample	<b>Computational Views</b>	Prototype view used as a basis for		
BAH For Labor Data Source	<b>Computational Views</b>	Basic View for Navigation Demons		
BAH 2010 Actual	Computational Views	Year to Date Actual		
BAH Load Check	Computational Views	Reasonableness checks		
BAH Project Performance	Computational Views	Current Mo, ITD, and Full Contract		
Project Sample Max	Computational Views	Basic View for Navigation Demon		
Expand Dynamic Entries				

Immediate update

Update Maximize

Finally, there are several additional differences in version 10.0:

- .....
  - For simplicity of definition and maintenance, menus do not have sub-menus, but a menu item can be another menu.
  - Formatting the menu is accomplished using a menu template, which determines colors, fonts, etc. Menu templates are a subclass of the sheet object

#### Maps

The enhancements to maps in version 10.0 are primarily in the interface used to define the map associations.

The aspects of the map's target object are presented in a tree in the task pane and the source is presented as a view in the worksheet.

	ome Insert	Page Layout	Formulas I	Data Review	View CON	ROL® Navigato	0010	OL® View	CONTROL® D	eveloper CON	TROLE Map	Developer Add-Ins Team		00
1000		topicion provident	(		Der con	inves nanyaru		and the second	COMPACTOR	ereoper son	inversing [	Developer Auguris Team		
	oad from External TE			SW .	60	20 F								
	ADFROMENTERMALT	Proper	ties Map	Initialize		Universe Sav	e Discard	Close						
Cont	roi-External		Pame	Associations	Access		Changes							
	Map Info	Proper	ties Show/Hid	e Construction	Maintenance	Display	Map							_
AI	• (*	∫∝ Filt	ers:											
A	8	c	D	E	E:	G	н	1 11	1		LA	Map - D F Load from External TBL		
1214	Content Selectio										15	map of constron externs for		
PIII	(ALL)	(Source D	ata)									Choose Aspect Types		
Dar	es:											Aspects	Source	Source
1.443	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											# Vantage		
												Model Currency Conflict Resolution		
	Properties	0												
1 10	entity_num -	fiscal year	· perjoum	PERIOD	acct_code	Account	DEV	DEPT	curr_code	book code	- Balance	Scenario (Dimension)		
*All*	1026	2014	1	201401	40010000180015	400100	001	80015	BAS	Actual	24,	Vantage Entity (Dimension)		
	1026	2014	2	201402	40010000180015	400100	001	80015	BAS	Actual	26,	P Vantage Entity Dimension Prog	67	
	1026	2014	3	201403	40010000180015	400100	001	80015	BAS	Actual	15.	Vantage Entity Total (Level)		
	1026	2014	[4	201404	40010000180015	400100	001	80015	BAS	Actual	4,	Vantage Entity (Level)	entity_num	
	1026	2014	5	201405	40010000180015	400100	001	80015	BAS	Actual	2,	<ul> <li>Vantage Department (Dimension)</li> </ul>		
	1026	2014	6	201406	40010000180015	400100	001	80015	BAS	Actual	3,	P Vantage Department Dimensio		
	1026	2014	1	201407	40010000180015	400100	001	80015	BAS	Actual	11,	Vantage Department Total (Le		
	1026	2014	3	201403	40010000180030	400100	001	80030	BAS	Actual		Vantage Department (Level)	DEPT	
	1026	2014	12	201401	40010000180035	400100	001	80035	BAS	Actual	_	<ul> <li>Vantage Division (Dimension)</li> </ul>		
	1026	2014	3	201402	4001000180035	400100	001	80035	BAS	Actual	4	P Vantage Division Dimension Pi		
	1026	2014	4	201404	40010000180035	400100	001	80035	BAS	Actual	~	Vantage Division Total (Level)		
	1026	2014	's	201405	40010000180035	400100	001	80035	BAS	Actual	_	Vantage Division (Level)	DIV	
	1026	2014	6	201406	40010000180035	400100	001	80035	BAS	Actual	-	<ul> <li>Vantage Accounts (Dimension)</li> </ul>		
	1026	2014	1	201401	40010000180040	400100	001	\$0040	BAS	Actual	201,	Vantage Accounts Dimension		
	1026	2014	2	201402	40010000180040	400100	001	80040	BAS	Actual	2,	Data Value	Balance	
	1026	2014	3	201403	40010000180040	400100	001	80040	BAS	Actual	22,	Prior Data Value		
	1026	2014	4	201404	40010000180040	400100	001	80040	BAS	Actual	119,	Vantage Summary (Level)		
	1026	2014	S	201405	40010000180040	400100	001	\$0040	BAS	Actual	39,	Vantage Accounts (Level)	Account	
	1026	2014	6	201406	40010000180040	400100	001	80040	BAS	Actual	260,	<ul> <li>Time Period (Dimension)</li> </ul>		
	1026	2014	?	201407	40010000180040	400100	001	80040	BAS	Actual	235,	Time Period Dimension Proper	6	
	1026	2014	1	201401	40010000180045	400100	001	80045	BAS BAS	Actual	2,	I Total Time (Level)		
	1026	2014	12	201401	40010000180100	400100	001	80100	BAS	Actual	80, 28,	Vear (Level)		
	1026	2014	13	201402	40010000180100	400100	001	80100	BAS	Actual	28, 66,	Quarter (Level)		
	1026	2014	4	201404	40010000180100	400100	001	80100	BAS	Actual	19,	# of Days in Year (Attribute)		
	1026	2014	TS .	201405	40010000180100	400100	001	80100	BAS	Actual	117.	# # of Days in Month (Attribute)		
	1026	2014	6	201406	40010000180100	400100	001	80100	BAS	Actual		First Period Marker (Attribute)		
	1026	2014	1	201401	40010000180105	400100	001	80105	BAS	Actual	61,	= of Pay Periods in Month (Att		
	1026	2014	2	201402	40010000180105	400100	001	80105	BAS	Actual	104,	Month (Level)	PERIOD	
	1026	2014	3	201403	40010000180105	400100	001	80105	BAS	Actual	0.446	A Monthly Poercy	1	
	1026	2014	4	201404	40010000180105	400100	001	80105	8AS	Actual	6,	Participa		
	1026	2014	S	201405	40010000180105	400100	001	80105	BAS	Actual	39,	Details		
	1026	2014	6	201406	40010000180105	400100	001	80105	BAS	Actual	15,	To map aspects, drag aspect from the	e tree to the worksheet	
	1026	2014	1	201401	40010000180110	400100	001	80110	BAS	Actual		100 C		11
	1026	2014	2	201402	40010000180110	400100	001	80110	BAS	Actual	86, 🕶	Immediate update	Up	idate N

To create an association, simply drag the target aspect from the task pane and drop it onto the associated column of the data source. The associated columns have a different background color (controlled by a template style) in the header of the view, and the associated aspects are highlighted in task pane.

To see the details of an association, you can open up the Details section at the bottom of the task pane, and click on the desired aspect.

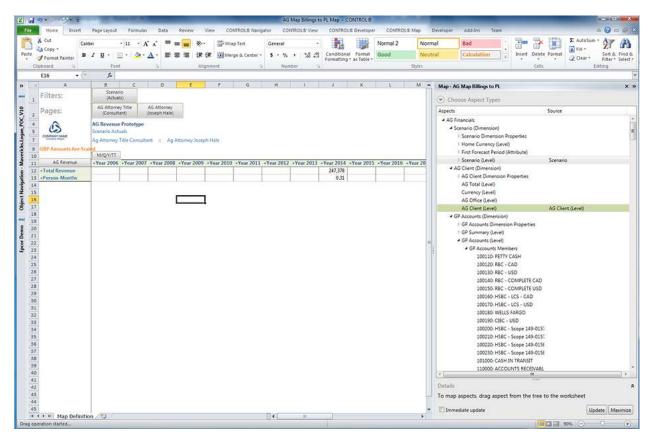


			x >
Choose Aspect 1	ypes		
Aspects		Source	Source Text
▲ Vantage			-
Model Currency			
Conflict Resoluti	on		
Scenario (Dimen	ision)		
A Vantage Entity (	Dimension)		
Vantage Entit	ty Dimension Prop		E
Vantage Entit	ty Total (Level)		
Vantage Entit	ty (Level)	entity_num	
4 Vantage Depart	ment (Dimension)		
	partment Dimensio		
	partment Total (Lev		
And the second	partment (Level)	DEPT	
4 Vantage Division			
	sion Dimension Pr	1	
	sion Total (Level)		
Vantage Divi		DIV	
<ul> <li>Vantage Accourt</li> </ul>			
P Vantage Acc	ounts Dimension F	Ralance	
11515 // 5110		M	
Details			×
			1
IE Search			×
Identification			
Name	Vantage Ent	tity (Level)	
Definition			
Target Text			
Target Aspect	Vantage Ent	tity (Level) (ID: VANTAGEENTI	TY)
Option Text	None		*
Option Code	(None)		•
Source Text			
Source Aspect	(ID: entity_n	ium)	•
Is Mapped	True		



You can use the property grid to enter SQL expressions in the Source Text property if you need to perform manipulations on the source data.

If the source of the map is a computational model, the worksheet will contain a view on that model, containing sample data. When you click on an aspect to drag onto the worksheet, the drop targets will be highlighted:



You can drop onto any dimension-branch button to create an association to the dimension, or any member name on the rows or columns to create an association to a specific member.

Alternatively, you can maximize the task pane and drag and drop a target aspect directly onto a source aspect or you can drag-and-drop a source aspect onto a target.



Choose Aspect Types			
AG Revenue	Aspects	Source	
Scenario (Dimension)	# AG Financials		().
1 Scenario Dimension Properties	<ul> <li>Scenario (Dimension)</li> </ul>		
Home Currency (Level)	Scenario Dimension Properties		
First Forecast Period (Attribute)	Home Currency (Level)		
Scenario (Level)	First Forecast Period (Attribute)		
AG Attorney (Dimension)	P Scenario (Level)	Scenario	
AG Attorney Dimension Properties	AG Client (Dimension)		
Currency (Level)	AG Client Dimension Properties		
AG Total (Level)	AG Total (Level)		
AG Office (Level)	Currency (Level)		
AG Rate Code (Level)	AG Office (Level)		
AG Attorney Title (Level)	AG Client (Level)	AG Client (Level)	
AG Attorney (Level)	# GP Accounts (Dimension)		
▲ AG Matter (Dimension)	V GP Accounts Dimension Properties		
AG Matter Dimension Properties	© GP Summary (Level)		
AG Total (Level)	# GP Accounts (Level)		
AG Office (Level)	# GP Accounts Members		
AG Line of Business (Level)	100110: PETTY CASH		
AG Attorney (Level)	100120: RBC - CAD		
AG Client (Level)	100130: RBC - USD		
AG Matter (Level)	100140: RBC - COMPLETE CAD		
✓ AG Revenue (Dimension)	100150: RBC - COMPLETE USD		
AG Revenue Dimension Properties	100160: HSBC - LCS - CAD		
AG Revenue (Level)	100170: HSBC - LCS - USD		
<ul> <li>Time Period (Dimension)</li> </ul>	100180: WELLS FARGO		
I Time Period Dimension Properties	100190: CIBC - USD		
Total Time (Level)	100200: HSBC - Scope 149-015798-001 - CAD		
1 Year (Level)	100210: HSBC - Scope 149-015798-070 - USD		
Quarter (Level)	100220: HSBC - Scope 149-015801-001 - CAD		
I # of Days in Year (Attribute)	100230: HSBC - Scope 149-015801-070 - USD		
I # of Days in Month (Attribute)	101000: CASH IN TRANSIT		
First Period Marker (Attribute)	110000: ACCOUNTS RECEIVABLE		
I # of Pay Periods in Month (Attribute)	110100- ACCRUED ACCOUNTS RECEIVABLE		
U Month (Level)	* <u>k</u>		
etails			

When building a brand new map, it is helpful to use the Initialize Associations button on the ribbon:

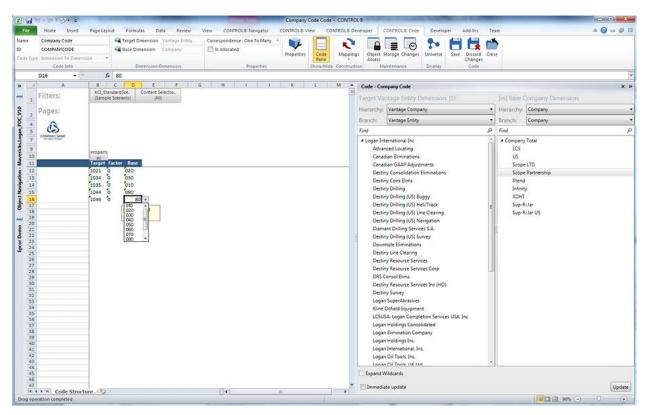
File	Home Insert Page Li	yout Forn	nulas Dat	a Review	View CONT	ROL® Navigato	CONTROL® View	CONTROL® Developer	CONTROL® Map
Name	Update Workforce from EPAY						1 😫 💣		
ID	UPDATEWORKFORCEFMEPAY			· · ·		100			
Subclass	Control-Control	Properties	Map Pane	Initialize Associations	Object Changes Access	Universe S	ave Discard Close Changes		
	Map Info	Properties	Show/Hide	Construction	Maintenance	Display	Map		

The initialization process has been enhanced in version 10.0 to examine associations in existing maps to try to deduce a more likely association for any given aspect.

#### Codes

The interface for building and maintaining correspondences is the only change to codes. The primary sheet in a code's edit book has the object view of the code on the worksheet, and the task pane contains the available elements of the target and base.





You can drag and drop a member from the task pane onto the worksheet to update the correspondence. When you click in the task pane, the drop target area is highlighted.

You can also update the code by typing directly in the view, copy/pasting from another worksheet or document, or selecting from the Excel validation list in the Target and Base columns.

#### Keywords

The changes to keyword functionality in version 10.0 are primarily oriented toward helping the administrator maintain and manage the ever growing sets of interdependent keywords used in virtually all CONTROL applications.

The primary tab of the keyword edit book is shown below:



Home Intert Pag	e Layout Formulas Data Revie	ew View CONTROL® Navi		IT_FCST_TIME Keyword + CI NTROL® Developer CON	TROL® Keyword	Developer	Add Ins Team			
users, c	ero Members Isplay * otal Location *		Rows 12 Scale Factor 1	Filter and Page Rows + 📝 Specify View Headers	Manual Format Publication Templates *	Chart	Addunt team			
	fr Filters:	Studie Orta	Laurar		respan	Cran	cumply motioner			
A1 • (*	J* Filters:									
Α.	Scerario Time	8		C	D	1 6	Keyword - CURRENT_FCST_TIME			
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Users	R	leplacement		Resolution	Parameters	Defined E Object	The Chief Administrator		- Bel-Ray	
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							Member Selection Details			
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5 H Keyword Values			04				& & FULLYEAR(&MONTHOFFS)     & & MONTHOFFSET(&CUR)	RENT_MONTH(12)	200901 THRU 200912 200902	

The worksheet contains the new keyword administrative view, filtered to the selected keyword. In this configuration you can see the replacement and resolved values of the keyword for all users, for a specific model scope, as well as the user and model scopes that the definition derives from. Administrative views are discussed in more detail below.

The taskpane allows you to select a user and model scope at the top, and drag and drop on the center section to add a new scope. You can click through the available scopes to see or copy the replacement value.

The Details tab at the bottom of the taskpane breaks down complex nested keywords, and shows the resolved values at each level of nesting. This feature is designed to help you analyze and troubleshoot problems in keyword definition.

Because the use of keywords has become so widespread, you are strongly advised to set the specific context that the keyword may be used in - e.g specifying an object, a member, a filter, etc. If you have done so, the Member Selection tab at the bottom of the task pane will be available to help you set the replacement to a valid value. (This feature is not yet complete.)

#### Scripts

Script functionality is largely unchanged in version10.0. However, there are a number of improvements that make scripts faster to build, easier to debug, and more open to analysis.

The primary page of an action script's edit book is shown below:



LOADANDPUBLISH LOADANDPUBLISH 1 Actives Serept	njout Formulas Data Review Properties Script Run Test	Object Changes Job Universe	Control & View COntrol & Developer		Addins Team		* <b>0</b> e
Script Info	Properties Show/Hide Construction	Maintenance Display	Script				
A1 • (*	fe D	E F G		I K LA	Script - Load and Publish		
Load and Publis	An a state of the				Script - Load and Publish		
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ObjectChangedKey	ObjectChangedClass ObjectChangedII	) ChangedBy ModelScope UserScope C	ChangeEvent ChangeEventDescription V	Where Changed Where Changed Rea	Set Keyword		ABLEUNITID bleUnitName
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D D					New Object		MAPSOURCEMODEL
1					2 Run Transform	KCLEMail	
2					Run Mapping	KCL_MENU KCL_MENU	POSITION SHOWERRORS
3					Run Script		6DalogSettings
5					Print Computational View	Selected_P	
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9					Type	Name	Argument
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Bun Mapping Publish Computational View	Mapping (Generic) Flash Actual	TargetClasss Model, TargetClass Model EXPENSE, Views FLASHA
0					Script Item Properties		
3					11 41 Search		
5							
S (5 ) B (9 ) D (1 ) C (1 )							

The task pane follows the standard format of available options at the top, selected steps in the center, and the step properties at the bottom.

Note that scripts can be visualized in the Universe, to help understand and trace depencies:

	🖇 Test Refs 🛛 🕂	
	1 Transform	
	1 Script -	
	1 Feed Mapping -	
		-
Allocate Exec Staff	S Allocate Mfg Mod w/Overhead +	≽ Map Labor Rates 🕂
Allocate Exec Staff	S Allocate Mfg Mod w/Overhead + 1 Transform +	Map Labor Rates +

As an additional debugging aid, you can click on the Test button on the ribbon to have CONTROL run the script without altering any data, and report the sequence of execution and any definition errors:



Script Test Results: LOAD	ANDPUBLISH ( Load and Publish )	
cript Test Results:		
RunScript: LOADANDPUB	JSH: Load and Publish	
No rows returned by qui The query text is: SELECT CNTADM.Hry_DI CNTADM.Hry_EXPENSE CNTADM.Hry_EXPENSE CNTADM.Hry_PROJECT CNTADM.Hry_PROJECT CNTADM.Hry_PROJECT CNTADM.Hry_STANDA (SELECT Member_ID FR CNTADM.Hry_DEPARTI CNTADM.Hry_STANDA Testing of sub-query cou For dimension: Departm	PARTMENT.Member_Key, CNTADM.Hry_PROJECT.Member_Key, .Member_Key, CNTADM.Hry_STANDARDTIME.Member_Key, SUM(Data1) FROM MENT, CNTADM.Hry_PROJECT, CNTADM.Hry_EXPENSE, CNTADM.Hry_STANDARDTIME, Jole WHERE (CNTADM.Hry_DEPARTMENT.DIO=CNTADM.DSrce_APayable.Department AND .PJ10=CNTADM.DSrce_APayable.Project AND .DETAIL=CNTADM.DSrce_APayable.Account AND convert(char(25), RDTIME.MO)=CNTADM.DSrce_APayable.Month) AND ((CNTADM.Hry_STANDARDTIME.MO IN OM CNTADM.Lev_MO WHERE Sequence BETWEEN 13 AND 14))) GROUP BY MENT.Member_Key, CNTADM.Hry_PROJECT.Member_Key, CNTADM.Hry_EXPENSE.Member_Key, RDTIME.Member_Key mponents follows: ent: er, security setting, keyword, or code, or an empty data source.)	:: AP Data Source): For Scenario
	Danastmant from column Danastmant	
	****	
cript Test Item Prop	erties:	
∃ ↓↑ Search		
Misc		
BasicInfo	RunScript: LOADANDPUBLISH: Load and Publish (ID: 1)	
Cardinality	2	
ErrorNumber	0	
ErrorText	ок	
IsLeaf	False	
ItemState	Modified	-
SubordinateObject		
UniqueKey	System.Object[]	
		OK Cancel

The test will include a test of any mappings or transforms the script contains.

For Program scripts, the Test button is replaced by a Debug button, which gives you the ability to debug your script in the VBA environment, loading any dependent scripts:

2 2 7-0-5-		AssiDelete Example Script + CONTROL®		
Taine MassDelete Example D MASSDELETEXAMPLE Sobriess Program Stratt Solid Info	Debug Debug Debug Acessi Wing the Active Workbook		er Addön Team	60021
aw 2 MassDelete Example (Action) 3 Object Changes View 4 Updating: Not Updateable Filter: ALL		1 J X	Script MassDelete Example     Sorp     Sorp	X (String)

If you make changes in the VBA environment, select the Debug button on the ribbon, then "Reload updated objects" to have those changes incorporated into your script objects.



For all subclasses of scripts, there is a new administrative view which summarizes the results of the job log for any scripts which have been run in batch:

- 4	A	В	С	D	E	F
1	Filters:	Scenario (None)		Time (None)		
2	Pages:					
4	A					
5	COMPANY NAME					
7	Company Bagan					
5 7 9 10		One Level				
10		Variable Dim				
11	Control Script	Total Time	<b>CPU Time</b>	-Other Time	Status	
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14 15 16	CNTADM_Local_000461 CNTADM_Local_000462 CNTADM_Local_000465		•		eActiveJob eActiveJob eActiveJob eActiveJob	
13 14 15 16 17 18	CNTADM_Local_000461 CNTADM_Local_000462 CNTADM_Local_000465 CNTADM_Local_000467	-	•		eActiveJob eActiveJob eActiveJob eActiveJob	

#### Transforms

Permanent transforms are defined in the same way as you would specify a transform in the wizard, except that the transform function may be selected at the time you create the transform:



Transform Templates: (1)	Properties:						
	IE + Search			>			
	Identification			IJ			
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	ID	٢	NEWTRANSFORM				
	Subclass						
	Category		Development (ID: DEVELOI	•			
	Description						
	Model Scope	1	All Models (ID: All Models)	•			
	- Definition						
	Function Type	0	Load	•			
	Growth Rate	Growth Rate					
	Fixed Amount		Spread Copy				
	Library Pattern		Forecast				
	Load From	٢	Random Run Sub-Transforms				
	Modification Constan	nt	Modify				
	Using Profile	٢	Allocate				
	Function Type		Recalculate Purge				
		ipula	ation of data the transform w	ill			

Since transforms are not created in the context of an open view, the ability to define target filters by selecting cells in the view is not supported.

The transform edit book for a saved transform will contain tabs for target, source, pattern, and driver data, as appropriate, which allows you to easily review the results the refine the transform definition.

#### Workflow

Workflows are currently defined and maintained using the version 9.2 object manager. They will receive a new designer in a later 10.0 or 10.1 release.

#### Manifest

The user interface for manifests has been modified to conform to the standard version 10.0 format. You can select objects to include in the manifest in the same ways you can navigate – by type or by category:



Manifest - Admin Objects				×»
				*
Type Category		Search		Q
▲ Structure		KCI_EDITMAPSOURCEMODEL (Ke	eyword)	
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Computational Models		Bauer		
Source Data Models		Bellevue		
Administrative Models	=	🖻 🔲 Bel-Ray		
A Dimension		🖻 🗐 Booz Allen Hamilton		
Variable		Þ 🔲 BCI		1
Organization		CompX		
Time		Consonus		
Scenario		Development		
Custom		EDC		
Content Selection		FMC		
₽ Level		Global Sources     Hilton		
Attribute		- Internet		
<ul> <li>Hierarchy</li> <li>DataSource</li> </ul>		<ul> <li>JumpStart</li> <li>Logan Aluminum</li> </ul>		
4 Interface		Mallinckrodt Baker, Inc.		
P View		Moran		
- view	*	Chiert Templater		*
Selected Objects 🔀 🕂		6262A		٥
Object	Class	Subclass	Status	*
Object Storage Info	DataSource	External		
Blank Form	Form	FormWithoutView		
Blank Group	Group	None		
Blank Book	Book	LooseleafBook		
Blank Action	Script	ProgramScript		
Blank Menu	Menu	StaticMenu		
Blank View	View	ComputationalModel		
Object Changes	View	ObjectView		
KCI_PUBLIC_CATEGORY_ID	KeyWord	Application		
KCI_Queues	Level	Organization		
Sample Object Security	View	Administrative		
Sample Keywords	View	Administrative		*
* [		11		
Manifest Item Properties:		44444		*
Immediate update			Update	ximize
		<b>11</b> 90%	-U	Ð



When selecting by category, you can control both the depth of the available object tree, and the object class groups and classes included, similar to de-cluttering in the Universe.

Manifest - Adm	nin Objects			>	× »
					*
Туре	Category		Depth: 3	Search	Q
AJC		+	▲ Structure		
Bauer			Models		
Bellevue			A 🔲 AJC Expenses (ID: A	ICEXPENSES)	
Bel-Ray			Dimensions		
Booz Allen H	amilton		🔺 🔲 AJC Family		
BCI			E Levels		
CompX			Attribute	s	
Consonus			Hierarchi	es	
Development	t		Filters		
Eugene Cat			Sorts		
EDC			Scenarios		
FMC			🖻 🛄 Time		
Global Source	es		AJC Account	s	
Hilton			Mappings		
▲ JumpStart			View		
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	1.1.7.7.9.4.9.4.9.1.1.19.4.5.	*	Structure: All V Interface: A	II ( Process: All ( ) Secu	rity: A
Selected Obje	cts 🗙 🕂		*****		٥
Object		Class	Subclass	Status	*
Object Storage	Info	DataSourc	e External		
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Blank Group		Group	None		
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Blank Action		Script	ProgramScript		
Dianis Manuel		Manu	Charled Arrow		

There are several important functional enhancements to manifests:

• There is a new storage option that will be used extensively for distributing CONTROL objects that support administrative views, object templates, and sample applications. Objects are stored in a windows file with a special format (extension .DCF) that can be written and read without Excel.



»	122	A	▼ (* B	f,	Change	ed complex	property Listed	Objects (C		To Databas To File	e ]	G		н	
		Manifest	Info		and the second se	Show/Hide	Maintenance	Display	*	To Workbo	-077 B	Manifest			
ID Subclass	ADM	INOBJEC		-	Properties	Manifest	Object Changes	Universe	Store	Restore	Save	Discard Changes	Close		
lame	Admi	in Object	•		-						4.00	(11)			

- This format is supported by two new public methods of the Library StoreManifestToFile and RestoreManifestFromFile.
- RestoreManifestFromFile can substitute object ID's to permit migration of objects between systems with different category naming conventions
- Store and Restore functionality has been merged with manifest, so the interface and capabilities are common to both facilities

#### Mappings

The primary page of the mapping edit book in version 10.0 is virtually identical to the primary page for the map. The most important part of a mapping definition is the specification of the associations between the target and source. For most mapping scenarios, it is expected that the map will be a dedicated object to the mapping.

and the get		U	odate EXP Mod w/WF Accounts N	Apping - CONTROL®			active Col
Home Insert Page Layout I	Formulas Data Review View	CONTROLS Navigator CONTROLS V	controut Developer	CONTROL® Mapping Develope	er Add-Bris Teach		ه 💽 ه
Workforce . Set . Total Location *	Comments Hyperlinks	Supports Zero Rows, 12 Scale Factor Supports Zero Cols Supports Zero Cols Construction Construc		Manual Format	2		
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	8 C 0	E F G		L M N A	Mapping - Update EXP Mod w/WF Accounts		
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10	M/Q/Y				Currency (Level)		
11 Workforce	-Year 2007 -Year 2008 -Year 200	+Year 2010 +Year 2011			Facility (Level) Function (Level)		
12 +Full Time Equivalent 13 +Total Employee Compensation					Department (Level)	Department	
14 -Benefits (Taxes, Health, & Retirement 15 Total Employee Related Expense 16 17 18					Project (Dimension)     Project Dimension Properties     Total Projects (Level)     Project Category (Level)		
19					Project (Level)	Project Workforce	
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10) 12] 13] 14] 16] 16]					V Mantha (Level)	Months	
17 19 19 19 10 10 11 11 12 14 14 14					Details To map aspects, drag aspect from the tree to the	worksheet	

To simplify the definition process, these enhancements were made to mappings:

• The AutoGenerateFilters property of the mapping can be set to "Generate Target Filters when Undefined", and any dimension having member (rather than dimension or level) associations will automatically be presumed to have a target filter limited to the associated members. (\*\*\* Check this)



• You can specify a target filter as part of a property of a map association

With these changes, you may not need to define source or target data access roles.

To assist in validating the correct definition and execution of the mapping, the default edit book also contains views of the target data, the source data, and the error log for the mapping. If target and/or source data access roles exist, the role task pane will accompany the target and source data.

There is a new Run without Save option available from the Test button on the mapping ribbon, which will execute the mapping and regenerate the target view, but not alter the target data.

#### New Object Views

Version 10.0 has extended the concept of views to support additional object meta-data. These new object views replace various dialog tabs from the version 9.2 editors.

#### Storage

The storage view documents the tables associated with an object, and the columns and indexes of those tables. It is available in the standard edit book of every object that has one or more tables for the storage of its meta-data or data.

Home Intert	Page Layout Formulas	Data R	eview View CONTROL	& Navigator CONTROLS Vie	- COMPO	L® Developer	CONTROLS	Model Developer	Add-Ini	Team	e () =
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	[2] Total Location = -		/ Excepti		ige f() Excel	Formulas =	Templa	ites -		<ul> <li>Properties</li> </ul>	
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8	CNTADM.Mod_EXPENSE	Table		Model Data Table	31,401						
5		Column	SCENARIOS_Key	Model Data Column	11						INT
		Column	DEPARTMENT_Key	Model Data Column	41						INT
		Column	PROJECT_Key	Model Data Column	10						INT
		Column	EXPENSE_Key	Model Data Column	25						PVT
1		Column	TIME_PERIOD_Key	Model Data Column	36						M
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					1					-	
	-	Column	Data_1	Model Data Column	9,582	100		10000000000	-	28/10	FLOAT
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		Index	Idx_Mod_Expense_ProjKey	Model Data Index		Active		PROJECT_Key		FALSE	CREATE INDEX Idx_Mod_Expense_ProjKey ON CNTADM.Mod_EXPENSE (PROJ
		Index	Ids_Mod_Expense_ScenKey	Model Data Index	(4)	Active		SCENARDOS_Key	Clustered	FALSE	CREATE CLUSTERED INDEX Idx_Mod_Expense_Scenkey ON CNTADM.Mod_EX
		Index	Idx_Mod_Expense_Timekey	Model Data Index	+	Active		TIME_PERIOD_Key		FALSE	CREATE INDEX Idx_Mod_Expense_Timekey ON CNTADM.Mod_EXPENSE (TIMI
	warman and and	Index	Idx_Mod_Expense_VarKey	Model Data Index		Active		EXPENSE_Key		FALSE	CREATE INDEX Ids_Mod_Expense_VarKey ON CNTADM.Mod_EXPENSE (EXPEN
	CNTADM.Com EXPENSE	Table	the second second second	Model Comments Table	65	1.1.1.1.1.1.1				30.00	
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		Column	PROJECT_Key	Model Comments Column	4						M
		Column		Model Comments Column	21						M
			EXPENSE_Key								INT
		Column	TIME_PERIOD_Key	Model Comments Column	13						
1		Column	User_Key	Model Comments Column	1						NT
1		Column	Category_Key	Model Comments Column	1						M
		Column	Private_Flag	Model Comments Column	1						CHAR(1)
		Column	Adornment, Type	Model Comments Column	2						M
		Column	Adornment	Model Comments Column							VARCHAR(1048576)
		Column	Sub Address	Model Comments Column	1						VARCHAR(250)
5		Column	Create Date	Model Comments Column	58						707)
	CNTADM.Sub EXPENSE	Table		Model SubAccounts Table	5						
1		Column	SCENARIOS_Key	Model SubAccounts Column	2				-		NT
				Model SubAccounts Column							NT .
		Column	DEPARTMENT_Key	Model SubAccounts Column Model SubAccounts Column	3						
											INT
		Column	PROJECT_Key								
		Column	EXPENSE_Key	Model SubAccounts Column	3						N
					3						NT NT

You can click on the Storage button on the ribbon to display the view when you are editing an object.

This view is not updateable.



#### **Events**

You can review and change the events associated with a view, form, or sheet by editing the object and then clicking on the Events tab on the ribbon. (Events cause customized actions to occur when the user performs a particular operation, such as filing the data in a view.)

A		8	C		D	E
Filters:		Scenario (Sample Sce				
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COMPANY NAME						
Congwry Slogen						
	-	Properties				
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		Refresh	Before	clarky		
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	W Se	ich Euront Refresh Regenerate	Triter	ALLOCATEMFGM	ODWOVERHEAD: Allocate Mtg Mod w/Overhead	
	W Se	- Ich Europt Refresh Regenerate Solve	ter	ALLOCATEMFGM	ODWOVERNEAD: Allocate Mirg Mod W/Overnead	
	36	Regenerate Solve Select Pane	ter	ALLOCATEMFGM	OUWOVERHEAU: Allocate Mitg Mod W Overnead	
	35	Regenerate Solve Select Page File Data Render View		ALLOCATEMFGM	OUWOVERHEAD: Allocate Mirg Mod W/Overnead	
	35	Regenerate Solve Select Pane		ALLOCATEMFGM	ODWOVERHEAD: Allocate Mirg Mod w/ Overnead	
	35	Regenerate Solve Select Page File Data Render View		ALLOCATEMFGM	ODWOVERHEAD: Allocate Mrg Mod w/ Overnead	
	35	Regenerate Solve Select Page File Data Render View		ALLOCATEMFGM	OUWOVERHEAD: Allocate Mrg Mod w/ Overnead	
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	35	Regenerate Solve Select Page File Data Render View		ALLOCATEMFGM	OUWOVERHEAD: Allocate Mrg Mod w/ Overnead	

This view is updateable if you have unlimited write access to the view, form, or sheet.

#### **Hierarchy Member Changes**

This object view presents the detailed log entries for hierarchy member additions, deletions, and changes – for those hierarchies that have logging enabled.

ilters:	Scenario (Sample Scenario)	Content Sele (All)	tio.									
ges:												
	Properties											
17	Properties Hierarchy_Key Use	r_Key User_I	ChangeDate	AddDeleteChange	FromLevel_Key	FromLevel_ID	FromMember_Key	FromMember_I	D ToLevel_Key	ToLevel_ID	OldMember_ID	NewMember_ID
		r_Key User_I 1 CNTAD				FromLevel_ID		FromMember_I		ToLevel_ID EDCINTERNAL_EXTERNAL	OldMember_ID	NewMember_ID
	Hierarchy_Key Use		4 2010-12-07 14:38:01.197	C	11,979	EDCDEAL	82,127			EDCINTERNAL_EXTERNAL		

This view is not updateable.

#### Level Member Changes

This object view presents the detailed log entries for level, attribute, or custom dimension member additions, deletions, and changes – for those levels and attributes that have logging enabled.



Filte	ers:	Scena (Sample Sc		D.,				
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		Properties		A 110 1 - 01	10000000000000000000000000000000000000	-	018/1	
		User_ID	ChangeDate	AddDeleteChange	and the second	ChangedProperty	OldValue	NewValue
		CNTADM	2010-12-08 11:52:13.760	A	BS0035			
	10.00	CNTADM	2010-12-07 19:29:56.050	C	BS0320	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	BS0330	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	BS0340	Special_Codes	Yes	
	1011	CNTADM	2010-12-07 19:29:56.050	C	BS0350	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	BS0360	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	BS0355	Special_Codes	Yes	
	10.11	CNTADM	2010-12-07 19:29:56.050	C	BS0345	Special_Codes	Yes	
	1011	CNTADM	2010-12-07 19:29:56.050	С	BS0500	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	c	BS9999	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0000	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0010	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0020	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0030	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0040	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0050	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0060	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0070	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0080	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0090	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0100	Special_Codes	Yes	
	(	ONTADM	2010-12-07 19:29:56.050	C	CF0110	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0120	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0130	Special_Codes	Yes	
	10000	CNTADM	2010-12-07 19:29:56.050	C	CF0140	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0150	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	CF0160	Special_Codes	Yes	
	(	CNTADM	2010-12-07 19:29:56.050	C	CF0170	Special_Codes	Yes	
1		CNTADM	2010-12-07 19:29:56.050	c	CF0180	Special_Codes	Yes	
6		CNTADM	2010-12-07 19:29:56.050	c	CF0190	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	c	CF0200	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	c	CF0210	Special_Codes	Yes	
	-00	CNTADM	2010-12-07 19:29:56.050	č	CF0220	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	c	CF0230	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	C	CF0240	Special_Codes	Yes	
		CNTADM	2010-12-07 19:29:56.050	c	CF0250	Special_Codes	Yes	
		INTADM	2010-12-07 19:29:56.050	c	CF0250	Special Codes	Ves	

This view is not updateable.

#### **View Generation Log**

This object view presents the detailed log entries for views which have had detailed logging enabled.



_															
E	Basic Sample (	View)													
- 14	New Generation	Log View													
	Updating: Not Up		1	ater											
	Model_Key View			GenerationDateTime	Chu Toulant I	and the state	Selections	ViewGen Key	Status	Reader Trade	Total Time Labor	14	MaxMemorySize XL		In the second second
				GenerationDate Lenie	Cro_tenetantis	Lighted_Timeinnis	Selections			Render_TuttethMS		Memorysize_AL	Maxmemorysize_At	construction in the second sec	
-	5.867.00 B.04			2012-08-24 15:49:56:000	234.00	1,0411,00	2010010111111111111111111	1,132,00	Completed	174.00	4,301,00	242,892,800,00	376 135 660.00	70,066,176,00	106 213 856 0 80 658 432 0
-	5,867,00 8,04			2012 08 24 15 48 20 657	609.00	1.872.00		1.087.00	Completed	3198.00	5.070.00	242,892,802:00	1/0.112.000.00	75.616.256.00	76 742 656.0
	3.867.00 8.04		1/00	2012-08-24 15:48:20:657	202.00	1,420,00	111111111111111111111111111111111111111	1,085.00		2,917,00	4 337.00	309.506.048.00	309 338 816.00	73.003 120.00	74 109 040 0
1	5.967.00 8.04			2012-08-11 [0:33:13.347 2012-07-29 11:46:44.987	158.00	1 311.00		1.063.00	Completed	4,243,00	5 554.00			94,052,352,00	95 195 136.0
-	3.867.00 8.04			2012-07-27 17:30:04 773	296.00	406.00	101000000000000000000000000000000000000	1.050.00	Completed	1,607,00	2,013.00	+	-	90,619,904.00	111 538 176.0
- 14	5867.00 8.04			2012-07-2516-29:29:653	515.00	795.00		1.039.00	Completed Completed	1,007,00	2,776.00			79.659.008.00	95 834 112 0
-	586720 8.04			2012-07-25 15 35 38.820	749.00	1 196.00		997.00	Completed	2,293,00	3,479.00			90,591,232,00	95,894,112.0 91,717,633.0
-	5.867.00 8.04			2012-07-25 15:35-51.810	827.00	1,185,00		997.00	Completed	4,212.00	5 399.00		+	83,755,008.00	84,893,696.0
-	5.867.00 8.04			2012-07-25 11:05:31:810	780.00	1,170.00	****************	992.00	Completed	2543.00	3,713.00	232,056,688,00	212/050.686.00	81,575,936,00	82,710,528,0
- 14	3.86720 8.04			2012-07-25 11:05:33-877	733.00	1,779.00		992.00		3,354,00	5,133,00		232,090,588100	90,234,880,00	91 377 664 0
	3.857.00 8.04			2012-06-18 13:02:05:067	375.00	1 388 (0)		991.00	Completed	454.00	1 872.00	218 488 837.00	376 147 968 00	218.460 160.00	376 147 568 0
-	5.867.00 8.04			2012-06-18 13:02:05:067	375.00	600.00		959.00	Completed	1.035.00	1,635.00	275 509 248.00	376 147 968.00	275,410,944.00	376 147 568.0
-	3.867.00 8.04			2012-06-18 11:50:07:073	390.00	577.00	*****************	958.00	Completed	1.013.00	1,590.00	356.806.656.00	376,147,968.00	356,724,736,00	376 147 968.0
-	5.867.00 8.04	1.00	100	2012-06-18 11:50 07:073	397.00	568.00	**************	956.00	Completed	968.00	1,556.00	356,454,400,00	376,147,968.00	356,478,976.00	376 147 968.0
-	5.867.00 8.04			2012-06-18 11:49:37 157	328.00	1387.00	****************	955.00		1.019.00	2 406:00	351,637,504.00	376,147,968.00	351,555,584,00	376 147 568 0
-	3.867.00 8.04			2012-06-18 11:47-26:470	171.00	301.00	****************	9554,00		751.00	1.012.00	350,371,840,00	376,147,968,00	351,555,584.00	376 147 968 0
-	3,867,00 8,04			2012-06-18 11:40:29:803	26.00	312.00	******************	954.00		723.00	1,035,00	350,355,456.00	376 147 968.00	350,355,456.00	176,147,968.0
-				2012-06-18 11:42 18:093	171.05	305.00	******	952.00	Completed	687.00	992.00	350,236,672,00	376147.968.00	350,199,808.00	176 147 968.0
- 14	5.867.00 8.04 5.867.00 8.04			2012-06-18 11:39 53 953	234.00	509.00	******	952.00	Completed	827.00	1136.00	350 162 944:00	376 147 568.00	350,171,136,00	176 147 968.0
-				2012-06-18 11:59 53 955 2012-06-18 11:58 14 347	218.00	350.00	****************	951.00	Completed	995.00	945.00	351,223,808.00	376 147 968.00	351.072.256.00	376 147 968.0
	5.867.00 8.04 5.667.00 8.04			2012-06-18 11:38:03:620	218.00	382.00	212222222222222222222222222222222222222	949,00	Completed	555.00	942.00	352 395 264.00	376 147 968.00	352,346,112,00	376 147 968 0
-	3.667.00 8.04	100	100	2012-06-18 11:36:03 820	733.00	2,877.00		949.00	Completed	5576.00	8.453.00	352,395,764.00	157.019.645.00	338,604,032,00	341,465,964,0
	5867.00 8.04	0.00	1001	2012-06-07 17:43:05:547	702.00	1 329 50	**************	945.00	Completed	2,059.00	3 588.00	295.763.968.00	417.611.776.00	90,374,144.00	91,500,544,0
-	5.867.00 8.04			2012-06-07 17:35:40 787	327.00	1698.00	****************	945.00	Completed	2,068,00	3,565.00	172,859,456,00	287,384,256.00	70,148,096,00	91,500,544.0 98,832,384.0
-	5.86720 8.04			2012-06-07 15:19:40.717	640.00	2,001.00	*****************	945.00	Completed	1967.00	5.968.00	230,969,344.00	230 960 344.00	89.875.712.00	90,202 112.0
-	5.867.00 8.04		1001	2012-06-07 16:17:50.377	687.00	3,520.00	***************	943.00	Completed		3,520,00		235,909,544,09	80,547,840.00	81,653,760.0
	5.867.00 8.64			2012-05-31 07:29:36:097	795.00	2,699,00	**************		Generated	3.588.00	6,287,00	212,992,000.00	212.992.000.00	90,431,488,00	91 566 080.0
-	386700 8.04	0.64	100	2012-05-30 07:55-36.460	390.00	23 650.00	***************	942.00	Completed	4 992.00	28.642.00	95,866,880.00	227 684 352.00	72 364 032.00	109 608 960 0
-	1.887.00 8.04		100	2012-05-29 12 23:54 437	312.00	436.00	*****************	940.00		1,170.00	1,606.00	225,538,048.00	225,865,728.00	81,977,344.00	109 608 960 0
- 44	5.867.00 8.04	1.00	140	2012-05-29 12-21-56 565	453.00	4,95,00	****************	940.00	Completed	2,511,00	3,401.00	217 841 664 00	213,855,728.00	77,799,424.00	91,762,688.0
	5867.00 8.04			2012-04-27 20:20:11:040	453.00	2,215,00	**************	932.00	Completed	4321.00	5,536,00	256,409,600.00	256-409.600.00	91,971,584,00	92,864,512,0
- 1-	5.867.00 8.04	1.07	100	2012-03-09 14 18 35 490	156.00	236.00	IF-IterISCENARIOS/SCENARIO	910.00	Completed	816.00	1 052 00	243 566 432 00	245,272,576.00	71.630.848.00	50 674 816 0
- 14	5.667.00 8.04			2012-03-09 14-18-23.863	140.00	278.00	[Piter]SCENARA/S(SCENARA	910.00		821.00	1092.00	243 847 168.00	245.002.240.00	71,626,752.00	80,674,816.0
- 14	5.86720 B.04	1.00	100	2012-03-09 14:18:14:957	219.00	345.00	*****************	908.00		928.00	1,0773,00	241 580 928.00	244 858 580.00	74 133 504.00	80.674,816.0
-	5.667.00 B.04			2012-03-09 14:17:52.750	702.00	1,766.00	100000000000000000000000000000000000000	907.00	Completed		4 845.00	239.321.088.00	239,121,088,00	79,339,520.00	80,674,516.0
- 14	5.867.00 8.04				515.00	1,756.00	*****************	907.00	Completed	3.543.00	4,040,00	145.424 384.00	239,321,058,00	79,339,520.00	80,574,810,0 84,221,952,5
	5,867,00 8,04		1/22	3032-03-07 14:08 38:410 2012-03-07 10:25:44:093	671.00	1,359.00	1111111111111111111111111	905.00	Completed	3,543.00	2 043.00	257 028 096:00	266.448.896.00	77 418 496.00	84,221,952.0 83,312,640.0
+					390.05	594.00			Completed						83,512,540.0 78,163,968.0
	5.967.00 8.04 5.967.00 8.04	1.00	1/00	2012-03-07 10-25-08-700		594.00	***************	904.00	Completed	1,097,00	1,691.00	237,088,768.00 235,601,920,00	266,448,896.00	73,854,976,00	78,163,968.0
				2012-03-07 10:24-56:103	764.00		101000000000000000000000000000000000000		Completed		4,556.00		266,448,896.00		77,746,176.0
	5.867.00 8.04	1.00	1/00	2012-03-0316:4240.043	749.00	1,637.00		902.00		2,789.00	4,426.00			83,828,736.00 79,648,704.00	95,952,896.0 80,384,000.0
+						1,117.00	****************	891.00		2,248.00	3,365.00		.9.		
	186720 8.04			2012-02-21 14-01-52 193	405.00		*********************		Completed	1 545 00	2,224,00			79.007 855.00	80.412.672.0

This view is not updateable.

#### Administrative Views

Version 10.0 introduces an entirely new subclass of views designed specifically for administrators of large scale CONTROL applications. Their goal is to present various kinds of application information on one or more objects in a format that can be customized, navigated, and published using all the familiar features of any CONTROL view.

Administrative models have a predefined set of dimensions which are created as part of the upgrade process to version 10.0. You are allowed to customize some properties of these dimensions' members, such as formatting styles, but otherwise they should not be modified. You can create and customize as many administrative views as you like.

#### **Control Object Security**

The Object Security view presents the critical details related to object access role assignment. This administrative view helps an administrator understand which users can see or change all the objects in CONTROL, and identify potential security problems or access deficiencies.

It is also an excellent tool to provide internal or external auditors detailed documentation of your security policy.



Charles and	(As Resolu	esol. ed]															
	Users	Object Securit				_											
Objects	Role	Object Privilege	AM Student Builder Privilege	Defined By User	Defined By Object	Role	The Object Privilege	Chiel Admini Builder Privilege	User	Defined By Object	Role	Object Privilege	IN Student Builder Privilege	Defined By User	Defined By Object	Role	Object Privileg
Model	ALLOBIECTS	Master	Yes	AMSTUDENT		KINGPIN	Master	Yes	CNTADM		ALLOBIECTS	Master	Yes	INSTUDENT	ALLOBIECTS	KINGPIN	Master
AIC Expensionxxxxx	ALLOBIECTS	Mater	Ves	AMISTUDENT	ALLOBACTS	KINGPIN	Marrey	Ves	CNTADIA	ALLOBITCTS	ALLOBICTS	Matter	Yes	PASTODIAT	AILOBIECTS	KINGPRI	Matter
Amys Model	ALLOBIECTS	Marter	Ves.	AMITUDENT		AJ74GPD4	Matter	Yes	CHITADIM	ALLOBRICTS		Maifer	Yes	INSTUDENT	ALLOBIECTS	KINGPIN	Matter
Anchor Mapping Texter	ALLOBIECTS	Master	Vet	AMETUDENT		KINGRIN	Matter	Vec	ENTADM	ALLOBJECTS		Master	Yes	INSTROMUT	ALLOBIECTS	KINGPIN	Master
AP Detail Source	ALLOBIECTS	Metter	Yes	ANTERUCENT		KIRAGODA .	Atester	Yes	CNTADA	ALLORRETS	ALLOBIECTS	Matter	100	INSTUDENT	ALLOBIECTS	KINGPIN	Marter
BAH Labor Rates	ALLOBIECTS	Manter	Ves	AMSTUDENT		KINGPIN	Master	Vec	CNTADIA	ALLOBIECTS	ALLOBICTS.	Matter	Vet	PRITUDINT	ALLOBIECTS	IONGPU1	Matter
BAH Overhead Rates	ALLOBIECTS	Martes	Ves	AMITUDENT		KINGPIN	Adapter	Yes	CNITADAR	ALLOBRICTS	ALLOBECTS	Master	1 miles	INSTRUCTION	ALLOBIECTS	KIMGPINI -	Matter
BAH Project Detail	ALLOBIECTS	Matter	Vet	AMSTUDENT		KINGPIN	Matter	Yes	CNITADM	ALLOBJECTS		Master	Vet	INSTUDENT	ALLOBIECTS	KINGPIN	Master
BAH WBS	ALLORIECTS	Abetter	Ves	AMSTROOM		KINGGINA	Adapter	Yes	CNTADA	ALLORIGTS	ALLOBIECTS	Marter	Yes	INSTUDENT	ALLOBIECTS	KDAGPDA	Matter
Bauer Revenue	ALCOBIECTS.	Master	Ves	AMSTUDENT		KINGPEN	Master	Vec	CNTADM	ALLOERCTS.	ALLOBIECTS	Matter	Vin	DISTUDIENT	ALLOBIECTS	KDIGEDI	Matter
Bauer Revenue Copy	ALLOSIECTS	Marter	Ves	AMISTUDENT		KINGPIN	Master	Ves	CNTADM	ALLOBECTS.		Matter	Vini	INSTRUCTION	ALLOBIECT'S	KD1GPD1	Matter
BCI Employee	ALLOBIECTS	Master	Vet	AMSTUDENT		KINGPIN	Master	Ver	CHILADM	ALLOBJECTS	ALLOBIECTS	Mather	Yes	INSTUDENT	ALLOBIECTS	KINGPIN	Mater
BCIExpenses	ALLOBIECTS	Matter	Yes	AMSTRUCENT		KINGPIN	States	Yes	CNTADM	ALLORACTS	ALLORIECTS	Marter	Y+s	PASTUDENT	ALLOBIECTS	KINGPIN	Marter
BCI Revenue	ALLOBIECTS	Master	Ves	AMSTUDENT		KINGPD4	Maiter	Yes:	CNTADM	ALLOWECTS		Marter	Vini	PRITUDINT	ALLOBIECTS.	KDIGEBI	Mailer
BCI Revenue Rates	ALLOBIECTS	Marter	Ves	AMISTUDENT		KIPHOPIN	Mastar	Yes	CHITADAS	ALLOBIECTS	ALLOBIECTS.	Master	Yes	POTUDENT	ALLOBRCTS	KDIGPRI	Matter
Bel-Ray Prices and Cost	ALLOBIECTS	Adapter	Vei	AMSTUDENT	ALLOBIECTS	KINGPIN	Master	Yes	CNITADM	ALLOBIECTS	ALLOBIECTS	Matter	Ves	INSTUDENT	ALLOBJECTS	KINGPIN	Mester
Bel-Ray Revenue	ALLOBIECTS	Master	Ves	AMETUDENT		67NGFIN	Master	Vet	CNTADM	ALLORIGTS		Marter	Yes	POTUDENT	ALLOBIECTS	KINGPIN	hilacter
Blank Model	ALCOBIECTS	Master	Ves			K0140.994	Master	Ves	CNTADM	ALLOBECTS		Matter	Ves	DISTUDENT	ALLOBIECTS.	KDAGEBA	Intester
Capital	ALOBIECTS	P.Santer	Ves.			KINGPIN	Master	Vet	CHITADM	ALLOBIECTS		Master	Ves	PATUDINT	ALLOBIECTS	KDIGPEN	Matter
Commission	ALLOBIECTS	Master	Ver	AMSTUDENT		KUNGPIN	Adapted	Ven	CNITADM	ALLOBICIS	ALLOBIECTS.	Matter	Yo	INSTUDENT	ALLOBIECTS.	KINGPIN	Mester
CompX Revenue	ALLOBIECTS	S.faster	Tes-			RINGPON	Adapter	Ves	CNTADM	ALLOBIECTS		Master	Yes	INSTUDENT	ALLOBIECTS	#3NAGP3NA	Matter
Consonus Data Center Exp	ALCOBIECTS	Master	Ver			10140904	Master	Ver	CNITADM	ALLOBIECTS		Master	Veri	PASTUDDAT	ALLOBIECTS	KINGPIN	Master
Consonus Revenue	ALLOBIECTS	Master	Vex	AMSTUDENT		KINGPIN	Master	Ves	CHITADM	ALLOBICTS		Matter	Ves	PATODINT	ALLOBIECTS	KDIGPSH	Master
Control Data Security	ALLOBIECTS	Master	Ves.	AMISTUDENT		ADVGPD4	Master	Yes	CNTADM	ALLOBICTS		Master	Yo	INSTUDENT	ALLOBIECTS	KINGPIN	Mester
Control Jobs	ALLOBIECTS	a.faster	Tes -	AMISTUCENT		EINGRIN	Master	Ver.	CNTADM	ALLOBIECTS		Manter	Ves	TRADUCTOR	ALLOBIECTS	KINGPIN	Atanter
Control Keywords	ALCORIECTS	Master	Ves	AMUTURENT	ALLOBIECTS	10140994	Master	Ver	CNTADM	ALLODIECTS		Muster	145	DISTUDENT	ALLOBIECTS.	KDIGPEL	Master
Control Object Properties	ALLOBIECTS	Master	Ver-	AMSTUDENT		KINGRIN	Master	Vet	CHITADAS	ALLOBICTS		Matter	Ves	<b>PUSTUDENT</b>	ALLOBIECTS	KDIGPIN	Master
Control Object Security	ALLOBIECTS	Master	Ves.	AMISTUDENT	ALLOBICTS	#374GP24	Master	Ves	CNTADM	ALLODICTS	ALLOBIECTS.	Master	Ves	INSTUDENT	ALLOGIECTS.	KINGPRI	Mester
Control Table Definitions	44108/6CTS	8.faster	Yes	AMSTUGENT		83240.0234	Master	Yes.	CNTAD84	ALLOBICCTS		Master	Ves	INSTUDENT	ALLOBIECTS.	#1HOPIN	Master
Control Views	ALCORIECTS	Master	Ves	AMSTUDENT		12746994	Master	Yes	CNITADM	ALLOBIECTS		Master	10	DISTUDING	ALLOBIECTS	KENGPEL	Mexter
Orivers - Facility	ALCORECTS	Mister	Ves	AMSTUDENT		KINGPRI	Master	Vet	CHITADAT	ALCOBICTS		Matter	Ves	PISTUDENT	ALLOBIECTS	KD4GPB4	Master
Drivers - Product	ALCOBIECTS	Master	Ve			KUNGPUL	Master	Yes	CNTADM	ALLOBIETS		Master	Ves	PASTUDENT	ALLOBIECTS.	KINGPIN	Mester
EDC Cash Flow	ALLOBIECTS	A.faster	Vet.	ANSTUDENT		63940294	Master	Ven	CNILADM	ALLOBIECTS		Master	Ves	PISTUDENT	ALLOBIECTS	KINGPIN	Master

The dimensions available in this administrative model are:

- Objects All first class objects organized by object group, class, subclass, and category. Any view will be limited to those objects the user has access to.
- Users Organized by group and license type.
- Object Security Variables The object access role ID, privilege, builder privilege, and the user and object scope that defines the privilege. (Typically object access is granted to groups of users and categories of objects, so this helps you understand how the privileges are derived.)
- Defined vs. Resolved Distinguishes between the object security as it was defined (typically at a group or category level) vs. how it is applied by individual user and specific object

#### **Control Data Security**

The Data Security view presents the critical aspects of detailed data access within models, hierarchies, and data sources.



ages:	Defined vs Resolved (As Resolved)	Model/Category (Model)				
	Control Data Securi Sample Data Security V Updating: Updateable					
		Dimension	Customer	Department	Employee	Product
	Defined By Object	ALLOBRETS				and an and a second sec
-Navigators	Data Access Role	SECURITVEYORGANIZATION				
	Read Filter (Defined)		#BORGANIZATION_SECURITY	*&ORGANIZATION_SECURITY	= & ORGANIZATION_SECURITY	6&ORGANIZATION_SECURITY
	Read Filter (Resolved)		= All	EALL	#ALL	=ALL
	Write Filter (Defined)		# & ORGANIZATION_SECURITY	# & ORGANIZATION_SECURITY	=&ORGANIZATION_SECURITY	#&ORGANIZATION_SECURITY
	Write Filter (Resolved)	Construction of the Constr	=ALL	±ALL	=ALL	zALL
	Defined By User	NAVIGATORS ALEOBIECTS		(2))	COURCE CO.	
cro	Defined By Object Data Access Role	SECURITYBYORGANIZATION		×		
00	Read Filter (Defined)	SECONDITISTONOMPRESATION	SCORGANIZATION Control Object Lookup	*&ORGANIZATION SECURITY	+ SORGANIZATION SECURITY	*&ORGANIZATION SECURITY
	Read Filter (Resolved)		sAlt Select desired value	eALL	#ALL	-All
	Write Filter (Defined)		· LORGANIZATION SECORITY	*&ORGANIZATION, SECURITY	+BORGANIZATION SECURITY	*&ORGANIZATION SECURITY
	Write Filter (Resolved)	and the second se	zALL	eAll	ALS	TALL
	Defined By User	NAVIGATORS	-747	2000	1.000 m	
	Defined By Object	ALLOBIECTS				
Clark Kent	Data Access Role	UNIVERSAL				
	Defined By User	CLARKKENT				
	Defined By Object	ALLOBIECTS				
LA Financial Planeter	Data Access Role	SECURITYEVORGANIZATION				
	Read Filter (Defined)		# BIORGANIZATION_SECURITY	+ & ORGANIZATION_SECURITY	+ & ORGANIZATION_SECURITY	*&ORGANIZATION_SECURITY
	Read Filter (Resolved)		=050 LA PLANT +&ORGANIZATION SECURITY	#050 LA PLANT #60RGANZATION SECURITY	= 050 LA_PLANT = & ORGANIZATION_SECURITY	+ 050 LA PLANT + & OFGANIZATION SECURITY
	Write Filter (Defined) Write Filter (Resolved)		#DS0 EA PLANT	#DS0 LA PLANT	= DORGANIZATION_SECONDTY = DS0 LA PLANT	#050 LA PLANT
	Defined By User	NAVIGATORS	1000 DA_PLANT	2000 LA FLANT	1000 DA PLANT	2000 DA PDANI
	Defined By Object	ALLOBISCIS		-		
Marketing VP	Data Access Role	SECURITVE/CRGANIZATION				
Manual Indiana Char	Read Filter (Defined)		# & ORGANIZATION SECURITY	*AGRGANIZATION SECURITY	+ & ORGANIZATION SECURITY	E&ORGANIZATION SECURITY
	Read Filter (Resolved)		=DS01A SALES DAYTONA INDY, TORONTO, YOKI	+DS0 LA SALES DAYTONA INDV. TORONTO, YORI	= DS0 LA SALES DAYTONA INDY, TORONTO, YOKI	=050 LA SALES DAYTONA INDY, TORONTO, YOU
	Write Filter (Defined)		=& ORGANIZATION_SECURITY	=&ORGANIZATION SECURITY	= & ORGANIZATION SECURITY	=&ORGANIZATION_SECURITY
	Write Filter (Resolved)	which a second	= D50 LA_SALES, DAYTONA, INDY, TORONTO, YOKI	+ D50 LA_SALES, DAYTONA, INDY, TORONTO, YORI	+ D50 LA_SALES, DAVTONA, INDV, TORONTO, YOR	=DS0 LA_SALES, DAYTONA, INDY, TORONTO, YOF
	Defined By User	NAVIGATORS				
1213 (N 1756)	Defined By Object	ALLOBIECYS				
Milan Financial Planner	Data Access Role	SECURITYBYORGANIZATION	CONCLUSION OF COMPL		= RORGANIZATION SECURITY	A A REAL PROPERTY OF A COMPLEX
	Read Filter (Defined) Read Filter (Resolved)		= SORGANIZATION SECURITY = DS0 MILAN PLANT	+ &ORGANIZATION SECURITY + DS0 MILAN PLANT	= RORDANIZATION_SECURITY = 050 MILAN PLANT	+&ORGANIZATION_SECURITY +050 MILAN FLANT
	Write Filter (Resolved)		= BOO MILAN PLANT	# BORGANEZATION SECURITY	= BOO MILAN, PLANT = BORGANIZATION SECURITY	6 200 MILAN, PLANT 6 200RGANIZATION, SECURITY
	Write Filter (Resolved)		=050 MEAN PEANT	#DS0 MILAN PLANT	#050 MEAN PLANT	=050 MILAN PLANT
	Defined By User	NAVIGATORS	The second	TRAN HILPPER PART	TRACTICAL CONTRACTOR	A CARLEND CONTRACTOR
	Defined By Object	ALLOBIECTS		-		

The dimensions available in this administrative model are:

- Model/Category– All models, hierarchies and data sources organized by object class, subclass, and category. Any view will be limited to those objects the user has access to.
- Dimension/Category All non-custom dimensions, organized by subclass and category
- Users Organized by group and license type.
- Data Security Variables The data access role ID, read and write filters before and after keyword resolution, and the user and object scope that defines the privilege.
- Defined vs. Resolved Distinguishes between the data security as it was defined (typically at a group or category level) vs. how it is applied by individual user and specific model

#### **Control Keywords**

The Keywords view presents the replacement and resolved values of keyword scopes.



Pages:	Keyword/Cate (CURRENT_N	5 Th / /	ed vs Resol. Resolved)	Model/Catego (Model)	ny
COMPANY NAME Company logan	Keyword Variables Replacement	Resolution	Parameters	Defined By Object	Defined By User
AM Student	201101	201101		ALLOBJECTS	AMSTUDENT
Blank User	200802	200802		ALLOBJECTS	ALLUSERS
The Chief Administrator	200802	200802		ALLOBJECTS	ALLUSERS
IN Student	200802	200802		ALLOBJECTS	ALLUSERS
Moran User 1	200802	200802		ALLOBJECTS	ALLUSERS
Moran User 2	200802	200802		ALLOBJECTS	ALLUSERS
-Navigators	200802	200802		ALLOBJECTS	ALLUSERS
CFO	200802	200802		ALLOBJECTS	ALLUSERS
Clark Kent	200802	200802		ALLOBJECTS	ALLUSERS
LA Financial Planner	200802	200802		ALLOBJECTS	ALLUSERS
Marketing VP	200802	200802		ALLOBJECTS	ALLUSERS
Milan Financial Planner	200802	200802		ALLOBJECTS	ALLUSERS

The dimensions available in this administrative model are:

- Keyword/Category- All keywords organized by subclass and category.
- Model/Category All models (for model scope), organized by subclass and category
- Users (for user scope) organized by group and license type.
- Keyword Variables Replacement and resolved values for each model and user scope, any parameters, and the model and user scope that is the source of the definition
- Defined vs. Resolved Distinguishes between the scope at which the keyword is defined vs. all scopes which contain resolved values

#### **Control Views**

This view presents the dimension-branch definitions of views by model (or object) and user scope.



COMPANY NAME	Objects (Expense)	Defined vs Resolved (As Resolved)	Views by Category (Basic Sample)			
Users	Variables	Department	Expense	Project	Scenarios	Time
The Chief Administrator	Filter/Selector	SELECTRERTSTSLCTR_DPRTMNT (D90 JUMPSTART)	=ALL	= PJ90 TOTAL_PROJ	=SCENARIOS CURR_BUD	NEXTYEAR (YR &NEXT_YEAR)
	Resolved Filter	SELECTRERTSTSLCTR_DPRTMINT (D90 JUMPSTART)	=ALL	=PJ90 TOTAL_PROJ	=SCENARIOS CURR_BUD	NEXTYEAR (YR 2009)
	Branch	Default	Default	Default	Default	Default
	Edge	Row	Page (Z)	Page (1)	Filter	Column
	Zero Members	DontSuppress	Suppress	DontSuppress	DontSuppress	DontSuppress
	Member Display	Level Default	Level Default	Level Default	Level Default	Level Default
	Total Location	Default	Default	Default	Default	Default
	Defined By Object		EXPENSE			
	Defined By User		CNTADM			

The dimensions available in this administrative model are:

- Views by Category– All views organized by subclass and category.
- Objects All objects (for model/object scope), organized by class, subclass and category
- Users (for user scope) organized by group and license type.
- Dimension/Category All dimensions, organized by subclass and category
- Variables Filter and resolved filter values, branch, edge and other branch properties for each model and user scope, and the model and user scope that is the source of the definition
- Defined vs. Resolved Distinguishes between the scope at which the view is defined vs. all scopes which contain resolved values

#### **Control Object Properties**

This view presents the values of public properties for selected objects.

ages:						
Objects	- ID	Name	SubClass	Description	Category	la la
Partial Total For Structure				-		
Model		5-34				•
AJC Expenses	AJCEXPENSES	AJC Expenses	Computational Models	This is a description entered via a meta-data view	AIC	ACCORENSES: AIC Expenses
Amys Model	AMYSMODEL	Arnys Model	Computational Models		Development	AMVSMODEL: Armys Model
Anchor Mapping Tester	ANCHORMAPPINGTESTER	Anchor Mapping Tester	Computational Models		Development	ANCHORMAPPINOTESTER: Ancho
AP Detail Source	APOETAILSOURCE	AP Detail Source	Source Data Models		JumpStart	APOETA3, SOURCE: AP Detail Sour
BAH Labor Rates	BAHLABORRATES	BAH Labor Rates	Computational Models		BOOZALLENHAMILTON: Booz Allen Hamilton	BAHLASORRATES BAH Labor Rate
BAH Overhead Rates	BAHOVERHEADRATES	BAH Overhead Rates	Computational Models		BOOZALLENHAME TON: Booz Allen Hamilton	EAHOVERHEADRATES, BAH Over
BAH Project Detail	BAMPROJECTDETAIL	BAH Project Detail	Computational Models		BOOZALLENHAMILTON: Sooz Allen Hamilton	BAHRROJECTDETAIL: BAH Project
BAH WBS	BAHW85	BAH WBS	Computational Models		BOOZALLENHAMILTON: Booz Allen Hamilton	BAHWES: BAH WES
Bauer Revenue	BAUERREVENUE	Bauer Revenue	Computational Models		Bauer	BAUERREVENUE: Bauer Revenue
Bauer Revenue Copy	BAUERREVENUECOPY	Bauer Revenue Copy	Computational Models		Bauer	EAUERREVENUECOPY Bauer Baye
BCI Employee	BCIEMPLOYEE	BCI Employee	Computational Models		BCL	BCIEMPLOYEE BCI Employee
BCI Expenses	BCIEXPENSES	BCI Expenses	Computational Models		BCI	ICENPENSES BCI Expenses
BCI Revenue	BCIREVENUE	BCI Revenue	Computational Models		BCI	BCREVINUE: BCI Revenue
BCI Revenue Rates	BCIREVENUERATES	BCI Revenue Rates	Computational Models		80	BOREVENUERATES BOThevenue R
Bel-Ray Prices and Cost	BEL RAYPRICESANDCOST	Bel-Ray Prices and Cost	Computational Models		BEL RAY: Bel-Ray	BEL RAYPRICESANDCOST: Bel-Ra
Bel-Ray Revenue	BEL RAYREVENUE	Bel-Ray Revenue	Computational Models		BEL RAY: Bel-Ray	BEL RAYREVERIA: Bal-Ray Parrent
Blank Model	BLANKMODEL	Blank Model	Computational Models		KCIOBIECTTEMPLATES: Object Templates	BLANKMODEL: Blank Model
Capital	CAPITAL	Cepital	Computational Models		JumpStart	Capital
Commission	COMMISSION	Commission	Computational Models		JumpStart	Commission
CompX Revenue	COMPUBEVENUE	CompX Revenue	Computational Models		ComoX	COMPAREVENUE: CompX Revenue
Consonus Data Center Exp	CONSONUSDATACENTEREXP	Consonus Data Center Exp	Computational Models		Consonus	CONSONUSDATACENTEREXP-Co
Consonus Revenue	CONSONUSREVENUE	Consonus Revenue	Computational Models		Conservat	CONSONUSSEVENUE Component
Control Data Security	CONTROLDATASECURITY	Control Data Security	Administrative Models		Public	CONTROLDATASECURITY: Control
Control Jobs	CONTROLIOBS	Control Jobs	Administrative Models		Public	CONTROLIORS: Control Jpbs
Control Keywords	CONTROLKEYWORDS	Control Keywords	Administrative Models		Public	CONTROLESYWORDS Control Xet
Control Object Properties	CONTROLOBIECTPROPERTIES	Control Object Properties	Administrative Models		Public	CONTROLOBIECTPROPERTIES: CO
Control Object Security	CONTROLOBJECTSECURITY	Control Object Properties	Administrative Models		Public	CONTROLOBIC TRECUTITY Cont
Control Table Definitions	CONTROLOBECTSECORITY	Control Table Definitions	Source Data Models		Public	CONTROL TABLE DEPORTIONS: Co
Control Table Definitions Control Views	CONTROLVEWS	Control Table Definitions Control Views	Administrative Models		Public	CONTROLVEWS: Control Views
Drivers - Facility	DRIVERS_FACILITY	Drivers - Facility	Computational Models		JumpStart	ORNERS FACEITY: Drivers - Facilit
Drivers - Product	DRIVERS_PRODUCT	Drivers - Product	Computational Models		JumpStart	DRIVERS_PRODUCT; Drivers - Prod
EDC Cash Flow	EDCCASHFLOW	EDC Cash Flow	Computational Models		EDC	EDCCASHFLOW EDC Cash Flow
EDC Deals	EDCDEALS	EDC Deals	Computational Models		EDC	EDCOEALS: EDC Deals

The dimensions available in this administrative model are:



- Objects All objects organized by class, subclass and category
- Properties All public properties of the object, which will vary by object class

This view is updateable for those objects for which the user has unlimited write privilege.

#### Jobs

This view presents the status and some runtime statistics for jobs which have run a script.

- 4	A	В	С	D	E	F
1	Filters:	Scenario (None)	Time (None)			
2	Pages:					
4	R					
5	COMPANY NAME					
5 7 9 10	Company Siegan					
9						
10		One Level Variable Dim				
11	Control Script	Total Time	<b>CPU Time</b>	-Other Time	Status	
12	-Allocate Mfg Mod w/Overhead	-		-		
13	CNTADM_Local_000461	•		-	eActiveJob	
14	CNTADM_Local_000462	*	( <b></b> )	-	eActiveJob	
15	CNTADM_Local_000465	÷	S <b>2</b> 0	-	eActiveJob	
16	CNTADM_Local_000467			-	eActiveJob	
17	CNTADM_Local_000470	*	S73	-	eActiveJob	
18						
19						

The dimensions available in this administrative model are:

- Script– Jobs organized by script, queue, user and job status
- Variables CPU times and current status

This view is read only.

#### **Other Enhancements**

#### **Multi-Dimensional Exchange Rate Models**

Several customer applications revealed a requirement which was cumbersome to address within the capabilities of CONTROL's currency translation capabilities.



Specifically, there are a set of accounts (typically balance sheet accounts) which have historical values in both a local currency and the reference currency (typically dollars) with the relationship of the values based on the translation rate at the time the asset or liability was acquired (or a weighted rate), rather than the rates in effect in the reporting period.

This situation requires the capability to store value in the local currency and the rate that is specific to that account, which may be different for the same currency and different entities.

In CONTRL 10.0, the exchange rate model is no longer be limited to a single organization dimension - the Currency dimension. Instead the model can have one or more organization dimensions, one of which must be the currency dimension.

If the exchange rate model has more than one organization dimension, all translation maps must define a valid association between the additional exchange rate model dimensions and the dimensions of the reporting model.

Those additional dimensions must be associated with the dimensions of the target model in the translation map with the following rules:

The association must be between a target level or dimension and an exchange rate level or dimension.

- Codes may be used in the association.
- Member associations are not supported.
- The exchange rates are presumed to be at the on-file level of all dimensions in the exchange rate model.

Exchange rates are looked up according to the associations specified in the translation map and applied in the same manner as the current method, including the specification and use of the fiscal year to date translation method.

Note that any views requiring translation which are missing dimensions required for the translation computation must have those additional dimensions added for processing, then summarized and removed for navigation, as is currently done when the Currency dimension of the reporting model is not present in the view.

Multi-step translations are not initially supported with higher dimensional exchange rate models, and an error will be raised if multi-step translation is specified.

Current applications run without modification.

For many accounts, there is likely to be a single rate across all members of the additional exchange rate model dimensions. With the higher dimensionality of the exchange rate model, the number of rates that must be populated and the probability that an exchange rate will not be present is increased.

To address this potential problem, an optional mechanism can be applied to substitute a non-zero rate for the missing rate at run time.

To accomplish this, the exchange rate variable dimension may have an optional attribute with the reserved ID "RATEAPPLICATION", which is a variable length character attribute.

For each exchange rate variable, the attribute may have one of three values:



- MAPPED means that the exchange rate applied will be determined by the mapped association
- DEFAULT means that the exchange rate is that of the default member of the root level of the additional organization dimensions(s)
- DEFAULTIFMISSING means that if the mapped exchange rate is missing or zero, the default rate is used

If the attribute is blank, then DEFAULT is presumed.

Keywords are allowed in the attribute values and they are evaluated in the exchange rate model and current user scope.

Any errors in the specification of missing rate rules (such as members not found) will cause the translation to fail.

If no substitute rate is found, then the current keyword based rules for dealing with missing rates applies.

#### Various workflow and asynchronous batch changes

Several enhancements were made late in the version 9.2 release cycle to improve the interaction between high volume process workflows and asynchronous batch processing:

- Locking of the workflow object prior to task state changes guards against deadlocks when there is a high degree of concurrent usage
- Evaluation of complex gating keywords involving CONTROL reference functions has been optimized
- The process for maintaining the status of assigned tasks whose scripts have failed or been terminated, and terminating jobs whose workflow task has been inactivated has been improved

#### **Deprecated Features**

The following features will no longer be supported:

- Review and Design Scratchpads have been superseded by object views
- Private and Shared Members were never embraced by the user community and had unresolved implications. Private and shared custom members and private and shared objects will continue to be supported.
- The &KCI\_RandomDensity keyword which controlled the generation of data in the Random function of transforms has been superseded by a transform property.
- Multiple embedded menus will continue to work if they were created in a previous CONTROL version and have not been converted to the new menu format, but may not be created or edited in the version 10.0 menu task pane.



### **Performance Enhancements**

Based on performance profiling of numerous client applications, version 10.0 contains the following improvements:

- For applications using the &Excel keyword, the initial delay on launching CONTROL when running an out of process engine has been eliminated.
- For very large data query results in view generation, transforms, and mappings, the time required to process the result into an internal view format is now faster by up to a factor of 20 times.
- The process which reads and writes data to the relational data base has been incorporated into the same process space as the computational engine, saving the copy time and reducing the memory footprint. This improvement effects all applications.
- Indexes are automatically created on underlying tables if &KCI\_AutoCreateIndexes keyword is set to TRUE, or if the AutoCreateIndexes property of the object has been set to TRUE

