

# Voyager to Analysis, edition for OLAP Conversion Whitepaper



## Applies to:

SAP BusinessObjects Voyager in SAP BusinessObjects XI 3.1 and SAP BusinessObjects Analysis, edition for OLAP in SAP BusinessObjects BI 4.0.

## Summary

This document describes the necessary steps and explores the known limitations of converting Voyager workspaces in BusinessObjects Enterprise XI 3.1 to Analysis, edition for OLAP (Analysis) workspaces in SAP BusinessObjects BI 4.

Analysis builds on the usability strengths of Voyager, while also adding significant depth to almost all features. Although there may be many visual similarities to Voyager, Analysis is a completely new product. There are many fundamental differences to the underlying architecture that includes making use of SAP BI Consumer Services (BICS). Consequently conversion is not a simple process and in some cases some Voyager capabilities will not convert.

In addition to describing the conversion workflow, this document will also explain the functional differences between Voyager and Analysis, edition for OLAP. This will help existing Voyager users understand the new workflows in Analysis and also help when planning to upgrade from BOE XI 3.1 to BI 4.

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## Author Bio



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## Table of Contents

Conversion Workflow .....	3
Conversion Highlights .....	4
Conversion Details .....	9
Crosstab .....	9
Charts .....	10
Layout .....	12
Page / Sheet .....	14
Structure Tab / Outline Task Panel .....	14
Axis Orientation .....	14
Drill State .....	14
Scroll State .....	15
Member Selection / Filter by Member .....	15
Favorite Members / Saved Filters .....	16
Conditional Filtering / Filter by Measure .....	17
Top N / Bottom N .....	17
NULL Filtering .....	17
Sorting / Value based Sorting .....	17
Exception Highlighting / Conditional Formatting .....	18
Calculations .....	18
<i>Custom Calculations</i> .....	18
<i>Dynamic Calculations</i> .....	18
<i>Calculations Conversion Summary</i> .....	19
<i>Totals</i> .....	20
Linked Components / Sub-Analysis .....	20
Drill Through .....	20
Link / Jumplink .....	20
Connections .....	20
<i>Connection Prompts</i> .....	21
Important Conversion Notes .....	22
Appendix: Why XMLA for MS SQL SERVER Analysis Services Connectivity? .....	23
Related Content .....	24
Copyright .....	25

## Conversion Workflow

Conversion from Voyager to Analysis, edition for OLAP requires that Voyager be at version XI 3.1. Customers with an earlier version must first upgrade to XI 3.1 and open and save their Voyager workspaces with XI 3.1 before they can convert their Voyager workspaces to BI 4.

**Before Voyager workspaces can be converted, the XI 3.1 OLAP connections used by Voyager must be recreated in BI 4. This is because the connection technology used by Analysis to connect to Microsoft SQL Server Analysis Services (SSAS) has changed from using ODBO to using XML/A. Direct conversion of connection details is impossible. It is very important that the new OLAP connection names in BI 4 are identical to the OLAP connection names used in XI 3.1. It is recommended to create test workspaces against the new connections in BI 4 to confirm they are correct, before performing conversion of Voyager workspaces.**

For more details about using XML/A connections please refer to Appendix: Why XMLA for MS SQL SERVER Analysis Services Connectivity? or the “Analysis, edition for OLAP Administrator’s Guide”.

The conversion process makes use of the new Upgrade Manager in BI 4. Generically the Upgrade Manager is used to migrate content from one SAP BusinessObjects environment to another SAP BusinessObjects environment. However it can also perform customized actions based on the object type being migrated. In the case of Voyager workspaces, the workspaces are not migrated; instead they are converted from Voyager workspaces to Analysis workspaces.

When converting a Voyager workspace the Upgrade Manager first connects to BOE XI 3.1, opens the Voyager workspace and identifies the OLAP connections that it uses. It compares the names of these OLAP connections with the names of the OLAP connections defined in BI 4. If there is a match then the conversion process commences. If there is no match then the conversion stops for that workspace and the next Voyager workspace is examined. If a Voyager workspace uses multiple OLAP connections but not all connections have a matching connection in BI 4 then only those crosstabs and charts that use the matching OLAP connections will be converted.

The conversion process involves opening the Voyager workspace and executing each query used in the workspace. The result set from each query is then reverse engineered and an equivalent Analysis workspace is created and stored in BI 4. Voyager workspaces are not recognized in BI 4.

**Because the conversion time for each workspace depends entirely on the length of time to run the query and the number of workspaces that need to be converted, the conversion process could take some time. It is recommended that the conversion of the Voyager workspaces be done as a separate activity after the Upgrade Manager has migrated all the other BusinessObjects content.**

## Conversion Highlights

The following table lists all Voyager artifacts and how they map to Analysis artifacts. The sections below provide more detail when there is not a 1:1 mapping between artifacts. The hyperlinks in the table allow you to jump directly to the specific section in Conversion Details.

Voyager	Analysis, edition for OLAP	Comment
Crosstab	Crosstab	
Row Panels	Rows in Layout Panel	
Column Panels	Columns in Layout Panel	
Slice Panels	Background in Layout Panel	
Measures in toolbar	Measures in Layout Panel	
Properties	Properties	Analysis has almost the same crosstab properties as Voyager and they map directly.
Name	Analysis Name	
Comments	Description	
Display NULL Values As	Display NULL Cells As	
Suppress NULL Values	N/A	Feature now appears in the Display toolbar tab.
Column Width	Cell Width	
Row Height	Cell Height	
Wrap Text	Wrap Text	
Display Formatted Cell Values	Show Formatted Cell Values	
Charts	Charts	
Clustered Column	Clustered Column	
Stacked Column	Stacked Column	
100% Stacked Column	100% Stacked Column	
3D Clustered Column	3D Clustered Column	
Line Chart	Line Chart	
Pie Chart	Pie Chart	
Clustered Bar	Clustered Bar	
Stacked Bar	Stacked Bar	
100% Stacked Bar	100% Stacked Bar	
Scatter Chart	Scatter Chart	
Box Plot	Box Plot	
Bubble Chart	Bubble Chart	
Radar Chart	Radar Chart	

Voyager	Analysis, edition for OLAP	Comment
Properties	Properties	Analysis has a subset of Voyager chart properties. All matching properties map directly.
Name	(Sub) Analysis Name	
Comments	Description	
Palette	Palette	
Style	Style	
Font	Font	
Suppress NULL Values	N/A	Feature now appears in the Display toolbar tab.
Show Parents	N/A	This property does not exist in Analysis and will be ignored during conversion.
Show Visual Totals	Show Totals	
Show Dimension Panel	N/A	The property is moot in Analysis because the charts no longer have Dimension panels.
Show Hierarchical Labeling	Show Hierarchical Labeling	
Show Legend	Show Legend	
Category Label	X Axis Label	
Value Label	Y Axis Label	
Value Scale	Y Axis Scale	
Value Scale Symbol	Y Axis Scale Symbol	
Data Series Label	Z Axis Label	
Layout	Layout	
2x2 layout	2x2 layout	Components associated with unsupported providers are not converted. Different component size compared to Voyager may result in more or less data being displayed.
Page / Sheet	Page / Sheet	Identical functionality, different name.
Structure Tab / Outline Task Panel	Structure Tab / Outline Task Panel	The Outline task panel shows all components in a workspace, not just those on the current sheet.
Axis Orientation	Axis Orientation	Identical functionality

Voyager	Analysis, edition for OLAP	Comment
Drill State	Drill State	
Drill Up	Collapse	
Drill Down	Expand	
Focused Drill Up	Drill Up	Not available in Analysis 4.0.
Focused Drill Down	Drill Down	Not available in Analysis 4.0.
Scroll State	Scroll State	The scroll state will not convert. It will be reset to the first member. For charts the zoom control will be reset to its default setting.
Member Selection / Filter by Member	Member Selection / Filter by Member	
Favorite Members / Saved Filters	Favorite Members / Saved Filters	Favorite Members will not convert. This does not impact those workspaces that use Favorite Members.
Conditional Filtering / Filter by Measure	Conditional Filtering / Filter by Measure	This is not supported in Analysis 4.0 for SSAS.
Top N / Bottom N	Top N / Bottom N	This is not supported in Analysis 4.0 for SSAS.
NULL Filtering	NULL Filtering	Control has moved from the component properties tab to be an option in the Display toolbar menu.
Sorting / Value based Sorting	Sorting / Value based Sorting	Sorts across measures are deliberately not supported in Analysis as sorting values with different units has no meaning.
Exception Highlighting / Conditional Formatting	Exception Highlighting / Conditional Formatting	
7 range definitions	Unlimited range, 9 priority levels	The 7 Voyager ranges will map to the first 7 Analysis levels.
Cell background formatting	Cell background formatting	The same color used in Voyager may not appear in Analysis, which uses a similar, but different color palette.

Voyager	Analysis, edition for OLAP	Comment
N/A	Exception Name	Exceptions from Voyager will be given the default name of "Conditional Format <n>", where <n> is an incremental number.
Calculations	Calculations	
Custom Calcs	Custom Calcs	The following Voyager calc functions do not have a direct equivalent in Analysis; MEDIAN, VARIANCE, STANDARD DEVIATION, PARALLEL PERIOD, PERIOD TO DATE, PRIOR PERIOD.
Dynamic Calcs	Dynamic Calcs	Both PERCENT CONTRIBUTION options in Voyager are supported in Analysis.  For RANK the only supported option is "Members displayed in the crosstab", which is the default.
Visual Totals	Calculate Totals As...	All Voyager visual totals are supported in Analysis but the behavior is different. Voyager could have multiple visual totals, which spanned all rows and/or columns. Analysis can only have one... but it is one per measure. For migration purposes we just take the first visual total and apply it to all measures.
Linked Components / Sub-Analysis	Linked Components / Sub-Analysis	Where a Voyager query contains 2 or more components, the first crosstab is defined as the main analysis with all other related components being sub-analyses.
Drill Through	Drill Through	Drill through is not supported in Analysis 4.0

Voyager	Analysis, edition for OLAP	Comment
Link / Jumplink	Link / Jumplink	Links to Crystal Reports are supported in Analysis 4.0
Connections	Connections	
Logon Prompts	Logon Prompts	
Prompt	Prompt	
SSO	SSO	
User Specified	Pre-defined	No functional change. The feature is called "Pre-defined" in Analysis.
MSAS 2000	N/A	Queries & components associated with this provider will never be converted.
SSAS 2005	SSAS 2005 (via XML/A)	Manual creation of new connection required prior to running the Upgrade Manager.
SSAS 2008	SSAS 2008 (via XML/A)	Manual creation of new connection required prior to running the Upgrade Manager.
Oracle Hyperion Essbase	N/A	Queries & components associated with this provider will not be converted in BI 4.0. Support is planned for a future release.
SAP BW 3.5	N/A	Queries & components associated with this provider will never be converted.
SAP BW 7.x	SAP BW 7.x	Manual creation of new connection required prior to running the Upgrade Manager.
Connection Variables	Connection Variables	
PCM	N/A	Queries & components associated with this provider will not be converted in BI 4.0. Support is planned for a future release.
SSM	N/A	Queries & components associated with this provider will not be converted in BI 4.0. Support is planned for a future release.
Associated Universe	Associated Universe	

## Conversion Details

### Crosstab

There are some significant UI differences between the crosstab in Analysis edition for OLAP and the crosstab in Voyager. Analysis removes the hierarchy shelves from the crosstab and places them in the Layout panel.

	All Periods	CY 2001	CY 2002	CY 2003	CY 2004
All Products	\$109,809,274.20	\$11,331,808.96	\$30,674,773.18	\$41,993,729.72	\$25,808,962.34
Accessories	\$1,272,057.89	\$20,235.36	\$92,735.35	\$590,242.59	\$568,844.58
Bikes	\$94,620,526.21	\$10,661,722.28	\$26,486,358.20	\$34,910,877.69	\$22,561,568.03
Clothing	\$2,117,613.45	\$34,376.34	\$485,587.15	\$1,010,112.16	\$587,537.80
Components	\$11,799,076.66	\$615,474.98	\$3,610,092.47	\$5,482,497.29	\$2,091,011.92

Figure 1: Voyager Crosstab

	All Periods	CY 2001	CY 2002	CY 2003	CY 2004
All Products	\$ 109,809,274	\$ 11,331,809	\$ 30,674,773	\$ 41,993,730	\$ 25,808,962
Accessories	\$ 1,272,058	\$ 20,235	\$ 92,735	\$ 590,243	\$ 568,845
Bikes	\$ 94,620,526	\$ 10,661,722	\$ 26,486,358	\$ 34,910,878	\$ 22,561,568
Clothing	\$ 2,117,613	\$ 34,376	\$ 485,587	\$ 1,010,112	\$ 587,538
Components	\$ 11,799,077	\$ 615,475	\$ 3,610,092	\$ 5,482,497	\$ 2,091,012

Figure 2: Analysis Crosstab

Both Analysis and Voyager crosstabs share the same properties. The exception is “Suppress NULL Values” where this feature has been moved to the Display tab of the toolbar menu.

The screenshots below show the crosstab properties for both Voyager and Analysis.

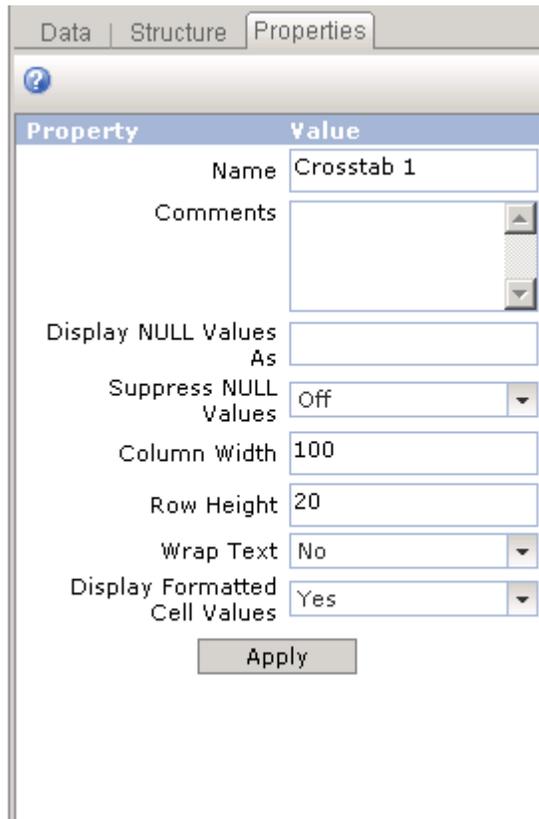


Figure 3: Voyager Crosstab Properties

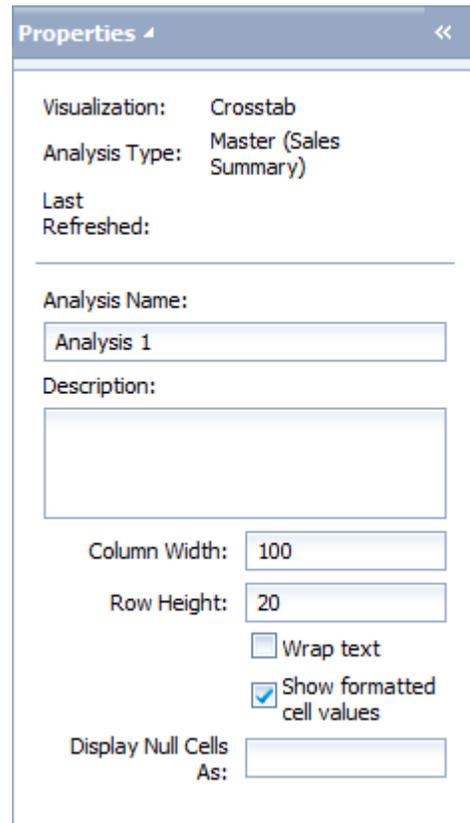


Figure 4: Analysis Crosstab Properties

## Charts

There have been no changes to the charting capabilities between Voyager and Analysis. Both products have identical chart types and features, except for one significant difference.

In Analysis, edition for OLAP, charts display either the entire linked analysis or the focused analysis. By default they will show the entire linked analysis and consequently Analysis charts will display the parent member. Analysis charts that contain parent members will appear quite different than Voyager charts which do not display the parent members. There is no property in Analysis to toggle displaying the parent member.

There are two additional minor differences.

- 1) In Analysis there is no “Show Dimension Panel” property because the dimension panels have already been removed from all components in Analysis. This property is thus irrelevant.
- 2) As with the crosstab, there is also no “Suppress NULL Values” property, which has been moved to the Display tab of the toolbar menu.

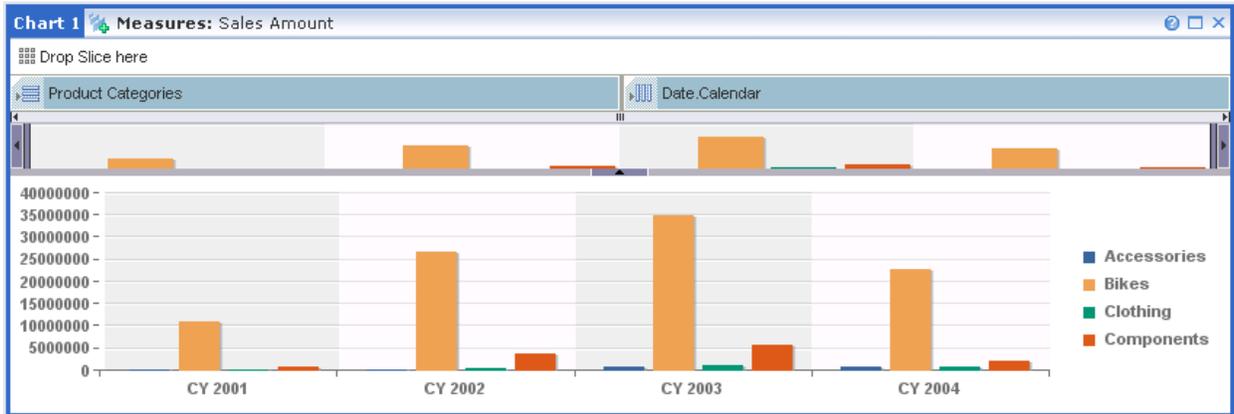


Figure 5: Voyager Column Chart

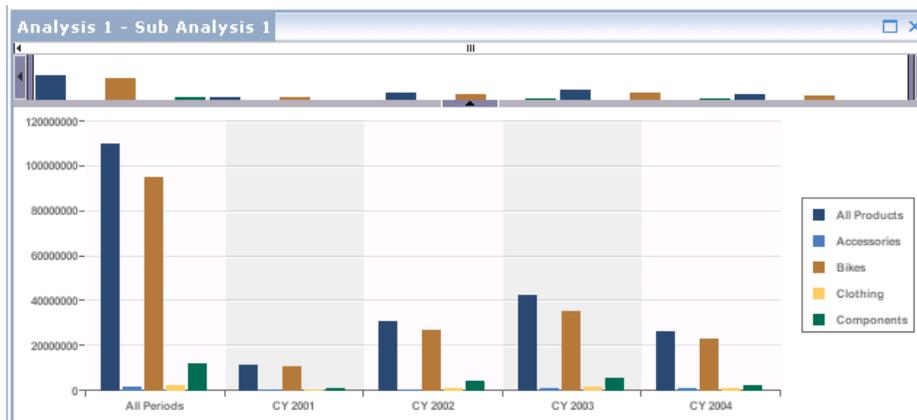


Figure 6: Analysis Column Chart

Both Analysis and Voyager charts share the same properties. The exception is “Suppress NULL Values” where this feature has been moved to the Display tab of the toolbar menu.

The screenshots below show the chart properties for both Voyager and Analysis.

Property	Value
Name	Chart 1
Comments	
Palette	Default
Style	Default
Font	Arial
Suppress NULL Values	Off
Show Parents	No
Show Visual Totals	No
Show Dimension Panel	Yes
Show Hierarchical Labeling	No
Show Legend	Yes
Category Label	
Value Label	
Value Scale	No scale
Value Scale Symbol	
Data Series Label	

Apply

Figure 7: Voyager Chart Properties

Visualization: Line  
 Analysis Type: Sub-Analysis (Analysis 1)  
 Last Refreshed:

---

Sub-Analysis Name:  
 Sub-Analysis 1

Description:

Style: Default  
 Palette: Default  
 Font: Arial

Show totals  
 Show hierarchical labeling  
 Show legend

X Axis Label:  
 Y Axis Label:  
 Z Axis Label:  
 Y Axis Scale: No scale  
 Y Axis Scale Symbol:

Figure 8: Analysis Chart Properties

## Layout

Analysis makes use of the same 2x2 component layout as Voyager. However, the introduction of the Layout panel and removing the dimension panels from the individual components means that the “shape” of each component will be slightly different (taller but not as wide). However this will not impact workspace conversion.

It should also be noted that because components linked to unsupported data providers will not get converted, some sheets may display less components, or even no component. In this instance the remaining components will be expanded to fill the empty space, following the default Voyager layout rules. In other words the rendering will be as if the components had existed but were then deleted.

When a Voyager workspace is saved, the display state of the left hand tab panel is also saved. This display state is also honored in Analysis. If the Voyager workspace had the left hand tab panel hidden then the left

hand task panel will be hidden in the converted Analysis workspace. Note that the new Layout panel will always be shown in all converted workspaces.

The screenshots below first show Voyager with the left hand tab panel hidden, followed by Analysis with the left hand task panel hidden.

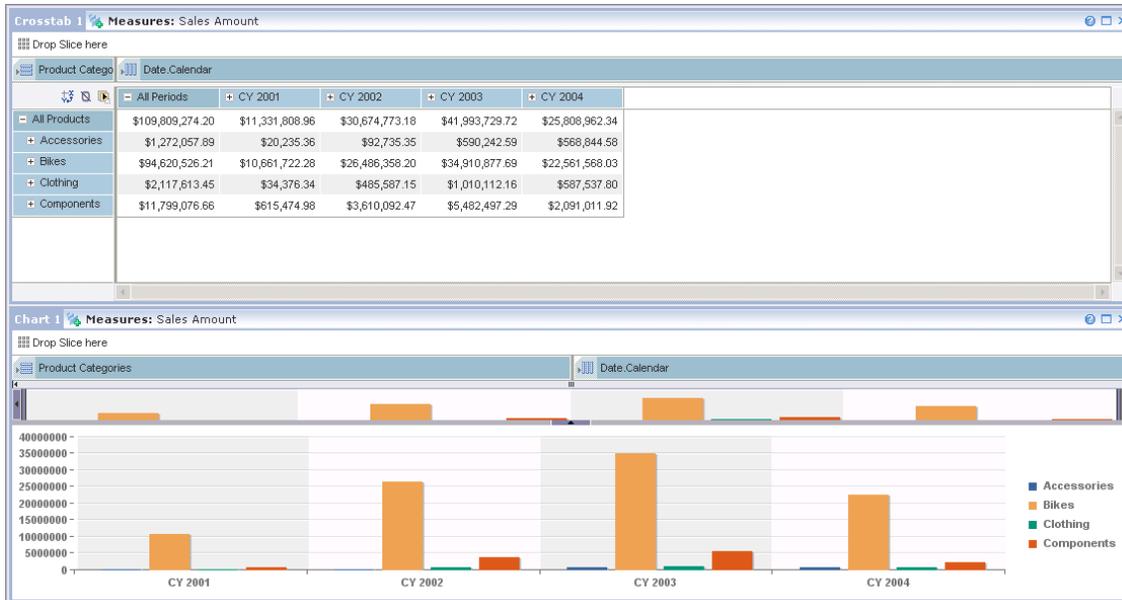


Figure 9: Voyager workspace without tab panel

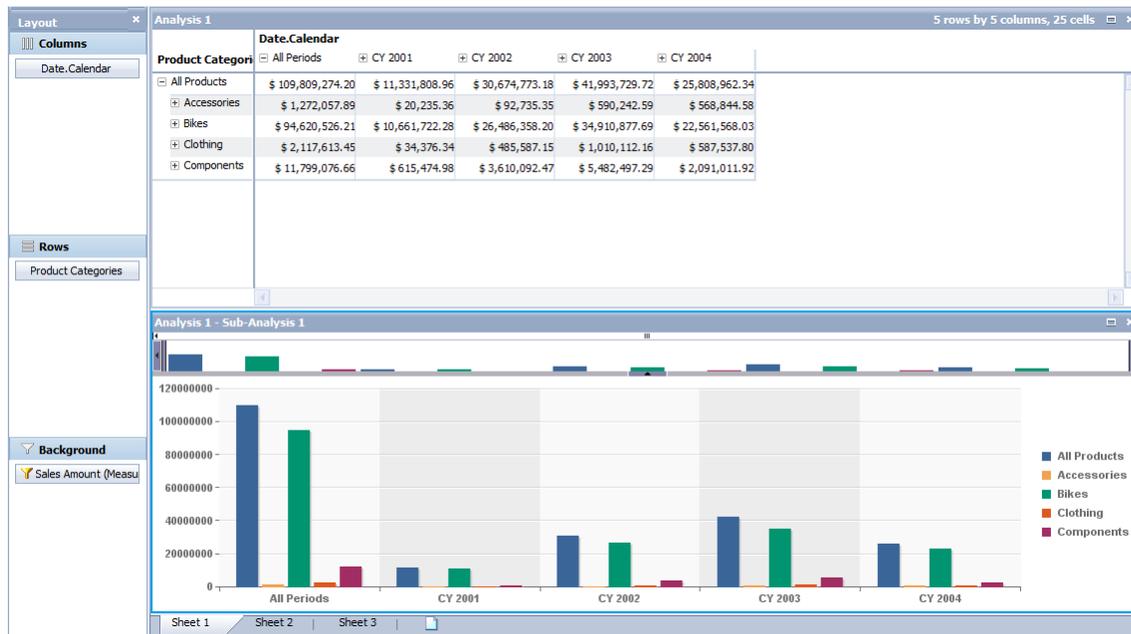


Figure 10: Analysis workspace without task panel

## Page / Sheet

In Analysis “Page” has been renamed to “Sheet”. There are some minor UI differences but the functionality is identical.



Figure 11: Voyager page control

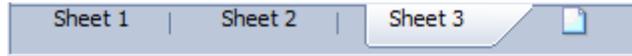


Figure 12: Analysis sheet control

**NOTE:** The pagination controls appear in Analysis edition for OLAP when the number of sheets exceeds the width of the analysis window.

## Structure Tab / Outline Task Panel

In Voyager the Structure tab in the left hand tab panel displayed the queries and their related components for the current page. The Outline task panel replaces this, which is a global control in Analysis, so the content of all sheets can be seen at any time. This is a usability benefit and does not impact workspace conversion.

## Axis Orientation

Every component in Voyager has at least one dimension/hierarchy on the row and column axes though there could also be stacked hierarchies plus dimensions in the slice axis (called the background filter in Analysis). Converted components will retain the same navigation state, i.e. the same hierarchies in the same locations in the same axis, and slice axis hierarchies will retain the same selection.

## Drill State

In Analysis, drilling into a hierarchy is performed asymmetrically, but in Voyager it is performed symmetrically. The screenshots below show the difference between an asymmetric drill and a symmetric drill, where we drill down on the Bikes Product Category for Australia. With symmetric drilling the Bikes member is expanded for all members of Country, but with asymmetric only the specific member chosen is expanded.

Crosstab 1 Measures: Sales Amount		
Country	Product Categories	Measures
		Sales Amount
All Geographies	All Products	\$109,809,274.20
	+ Accessories	\$1,272,057.89
	- Bikes	\$94,620,526.21
	+ Mountain Bikes	\$36,445,443.94
	+ Road Bikes	\$43,878,791.00
	+ Touring Bikes	\$14,296,291.27
	+ Clothing	\$2,117,613.45
	+ Components	\$11,799,076.66
	Australia	All Products
+ Accessories		\$1,272,057.89
- Bikes		\$94,620,526.21
+ Mountain Bikes		\$36,445,443.94
+ Road Bikes		\$43,878,791.00
+ Touring Bikes		\$14,296,291.27
+ Clothing		\$2,117,613.45
+ Components		\$11,799,076.66
Canada		All Products
	+ Accessories	\$1,272,057.89
	- Bikes	\$94,620,526.21
	+ Mountain Bikes	\$36,445,443.94
	+ Road Bikes	\$43,878,791.00
	+ Touring Bikes	\$14,296,291.27
	+ Clothing	\$2,117,613.45
	+ Components	\$11,799,076.66

Figure 13: Voyager symmetric drilling

Analysis 1		
Country	Product Categories	Measures
All Geographies	All Products	\$ 109,809,274.20
	+ Accessories	\$ 1,272,057.89
	+ Bikes	\$ 94,620,526.21
	+ Clothing	\$ 2,117,613.45
	+ Components	\$ 11,799,076.66
Australia	All Products	\$ 109,809,274.20
	+ Accessories	\$ 1,272,057.89
	- Bikes	\$ 94,620,526.21
	+ Mountain Bikes	\$ 36,445,443.94
	+ Road Bikes	\$ 43,878,791.00
	+ Touring Bikes	\$ 14,296,291.27
	+ Clothing	\$ 2,117,613.45
	+ Components	\$ 11,799,076.66
Canada	All Products	\$ 109,809,274.20
	+ Accessories	\$ 1,272,057.89
	+ Bikes	\$ 94,620,526.21
	+ Clothing	\$ 2,117,613.45
	+ Components	\$ 11,799,076.66

Figure 14: Analysis asymmetric drilling

Because of the different behavior it is not possible to convert the drill state. Consequently converted workspaces will not include any saved drill state. Instead each hierarchy will be expanded to the first level of the hierarchy.

### Scroll State

Because the drill state is not converted, this also means that the scroll state of a component (i.e. the position of the scroll bars in the crosstab or position of the zoom control in the charts) will not be converted. For example, in a chart the zoom control may be set to view a specific set of members.

Another factor that complicates conversion is that the different component size between Voyager and Analysis alters relative position calculations. In converted workspaces the chart zoom control and crosstab scrollbars will be reset to their default position.

### Member Selection / Filter by Member

Voyager allowed an arbitrary selection of members and this was directly mapped to what was displayed in the crosstab or chart. In Analysis ragged, multi-level selection is no longer possible. Instead Analysis follows the same model as many other tools from the same genre where member selection subsets the cube; i.e. it defines the “scope of analysis”. This means that when a child member is selected, all of its ancestors are also selected. Similarly if a parent member is deselected, all of its descendants are deselected.

To reinforce this different workflow, we no longer refer to member selection in Analysis. Instead we say we are “filtering by member” and this is achieved using the Filter by Member task panel.

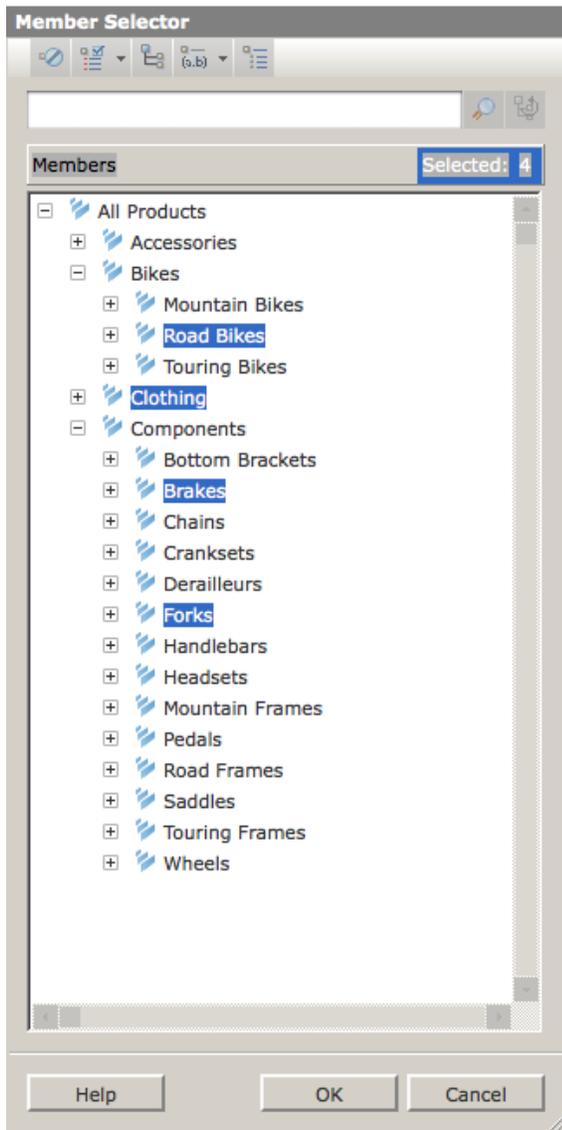


Figure 15: Voyager member selector dialog

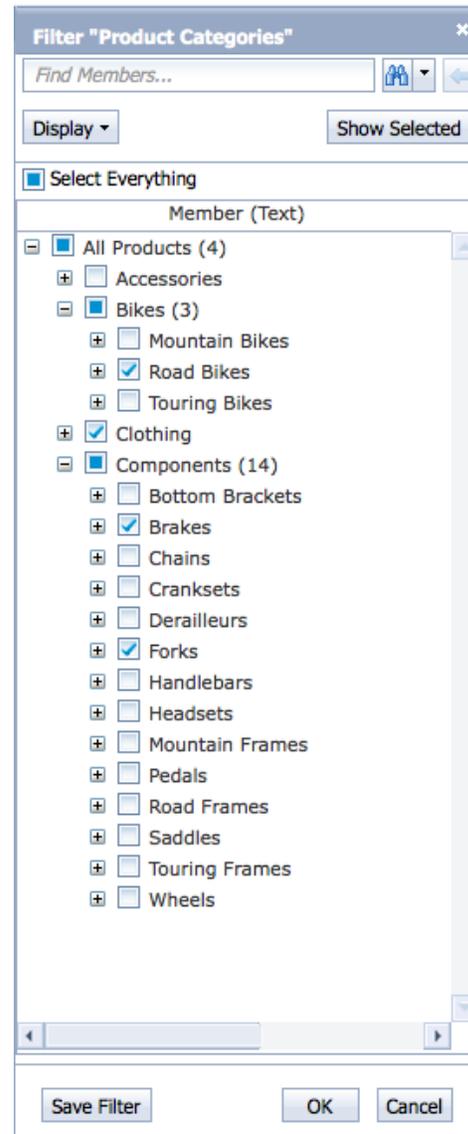


Figure 16: Analysis "Filter by member" task panel

Unwanted members or levels of members can be hidden using context menus in the crosstab.

### Favorite Members / Saved Filters

Favorite members will not be converted. Favorite members are associated with connection objects. Because no connections are converted (i.e. all connection objects have to be recreated) this means that there are no Favorite Members. It will be necessary for each user to create new saved filters in Analysis.

## Conditional Filtering / Filter by Measure

Conditional filtering, which is known as “filtering by measure” in Analysis, is not supported in Analysis 4.0 for SSAS connections.

## Top N / Bottom N

Top N/Bottom N is a specific type of “filter by measure” and is not supported in Analysis 4.0 for SSAS connections.

## NULL Filtering

The NULL suppression in Analysis has a modified behavior compared to Voyager which may result in some rows/column being removed in Analysis that were previously visible in Voyager.

NULL suppression will convert directly to Analysis, but in Analysis NULL suppression will remove rows/columns that contain all NULLS plus also rows/columns that contain all ZERO values. Consequently any rows or columns that contain just zero values will not be seen in an Analysis workspace when NULL suppression is enabled.

The NULL suppression control has moved from the component properties tab in Voyager to the Display toolbar in Analysis, as shown in the figures below.

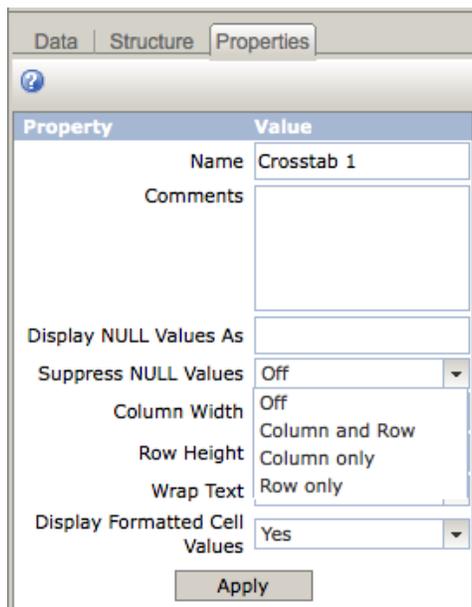


Figure 17: Voyager NULL suppression

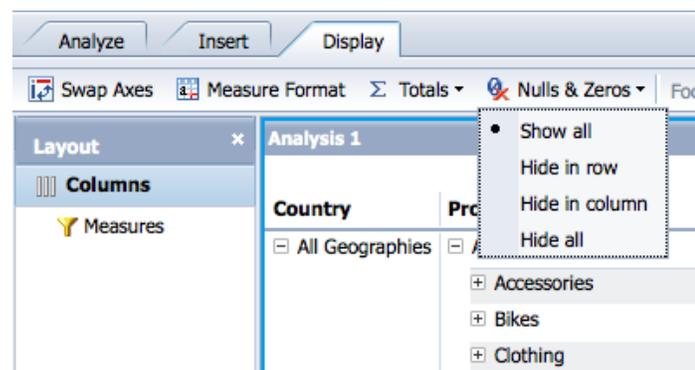


Figure 18: Analysis NULL and Zero suppression

## Sorting / Value based Sorting

Sorting has been enhanced in Analysis but it retains the same behavior as in Voyager. Voyager workspaces with sorting defined will display the same results in Analysis. Sorting converts directly.

Analysis is also able to sort hierarchy members. We call this “metadata sorting”. The traditional sorting in Voyager is called “value based sorting” in Analysis.

## Exception Highlighting / Conditional Formatting

The exception highlighting UI in Analysis is completely different compared to Voyager but functionally the Analysis conditional formatting is a superset of the Voyager exception highlighting.

The Voyager UI allowed exceptions to be defined without using terms such as “greater than”, “between” and “equal to”. However these terms are now used in Analysis to allow terms such as “not equal to”, “greater than or equal to” and “outside” to be more clearly specified.

In Voyager up to 7 exception ranges can be defined while Analysis allows an unlimited number of ranges with up to 9 prioritized levels. During conversion, the 7 Voyager ranges will map to the first 7 Analysis priority levels.

Voyager only formatted the cell background. Analysis additionally allows value formatting or symbols to be used. However converted workspaces will continue to format the cell background. Additionally the specific colors used in the Voyager workspace may not be the same color that appears in Analysis. When compared to Voyager, Analysis uses a similar but different color palette.

Analysis assigns a name to every conditional formatting rule. This allows it to be easily recognized and edited via the Conditional Formatting task panel. There is no such name in Voyager so exceptions in converted workspaces will be given the default name “Conditional Format <n>” where <n> is an incremental number.

## Calculations

There are significant differences between the calculations available in Voyager and those available in Analysis. This is a direct result of the different underlying technologies used in both products. Voyager had two different types of calculations though they were not differentiated in the UI; custom calculations and dynamic calculations.

### Custom Calculations

In Voyager custom calculations were simplistic. They were either a single function acting on a set of members, or a single operator acting on two operands (i.e. <operand 1><operator><operand 2>). As a result it is likely that Voyager calculations will comprise of nested calculations. For example the calculation  $T = A + B - C$  requires two nested calculations in Voyager;  $X = A + B$  and  $T = X - C$ .

These nested calculations mean that the intermediate calculations are usually “hidden” with only the final calculation visible in the crosstab. When these calculations are converted to Analysis, the “hidden” calculations will become visible. It will be up to the user to either hide these calculations again or take advantage of Analysis’s more powerful calculation capabilities and recreate the calculations.

Analysis uses a different calculation engine and allows for “free-form” calculations. However the following Voyager calculation functions do not have an equivalent in Analysis when connecting to SSAS:

MEDIAN, VARIANCE, STANDARD DEVIATION, PARALLEL PERIOD, PERIOD TO DATE, PRIOR PERIOD

### Dynamic Calculations

Analysis supports both the PERCENT CONTRIBUTION and RANK dynamic calculations from Voyager.

For PERCENT CONTRIBUTION both options in Voyager are supported in Analysis (Percentage Contribution to Parent & Percentage Contribution to Overall Result).

For RANK the only supported option is “Members with the same parent”. If a different option is specified in the Voyager workspace, the rank will still be applied. In Voyager the RANK also specifies a sort order but in Analysis the order is always such that the highest/largest value has a rank of 1.

## Calculations Conversion Summary

Voyager Calculation Name	Type String	Number of Fields	Field Type Info	# Selections in Field	Notes	Analysis Syntax
AdditionCalculation	addition	2	firstField: VALUE or MEMBER secondField: VALUE or MEMBER	1 1		"<firstField>" + "<secondField>"
AverageCalculation	average	1	firstField: MEMBER	-1		("<1>" + "<2>" + ... + "<n>") / n
DivisionCalculation	division	2	firstField: VALUE or MEMBER secondField: VALUE or MEMBER	1 1		"<firstField>" / "<secondField>"
DynamicPercentContributionCalculation	dynamicpercentcontribution	1	typeField: FUNCTION	1		Not Applicable
DynamicRankCalculation	dynamicrank	2	typeField: FUNCTION sortField: FUNCTION	1 1		Not Applicable
MaximumCalculation	maximum	1	firstField: MEMBER	-1		MAX("<1>"; "<2>"; ...; "<n>")
MedianCalculation	median	1	firstField: MEMBER	-1		DNE
MinimumCalculation	minimum	1	firstField: MEMBER	-1		MIN("<1>"; "<2>"; ...; "<n>")
MovingAverageCalculation	movingaverage	3	measureMemberField: MEMBER timeHierarchyField: HIERARCHY periodField: VALUE	1 1 1	time calc	DNE
MultiplicationCalculation	multiplication	2	firstField: VALUE or MEMBER secondField: VALUE or MEMBER	1 1		"<firstField>" * "<secondField>"
ParallelPeriodCalculation	parallelperiod	3	measureMemberField: MEMBER timeHierarchyField: HIERARCHY periodField: LEVEL	1 1 1	time calc	DNE
PercentageCalculation	percentage	2	firstField: MEMBER secondField: MEMBER	1 1	called Percent_A in Analysis	"<firstField>" %_A "<secondField>"
PercentDifferenceCalculation	percentdifference	2	firstField: MEMBER secondField: MEMBER	1 1	called Percent in Analysis	"<firstField>" % "<secondField>"
PeriodToDateCalculation	periodtodate	4	measureMemberField: MEMBER aggregationFunctionField: timeHierarchyField: HIERARCHY timePeriodField: LEVEL	1 1 1 1	time calc	DNE
PriorPeriodCalculation	priorperiod	3	measureMemberField: MEMBER timeHierarchyField: HIERARCHY priorPeriodField: VALUE	1 1 1	time calc	DNE
RollupCalculation	rollup	1	firstField: MEMBER	-1		ROLLUP("<1>"; "<2>"; ...; "<n>")
Round	round	1	firstField: MEMBER	1		ROUND("<firstField>")
SquareRootCalculation	squareroot	1	firstField: MEMBER	1		SQRT("<firstField>")
StandardDeviationCalculation	standarddeviation	1	firstField: MEMBER	-1		DNE
SubtractionCalculation	subtraction	2	firstField: VALUE or MEMBER secondField: VALUE or MEMBER	1 1		"<firstField>" - "<secondField>"
SumCalculation	sum	1	firstField: MEMBER	-1		"<1>" + "<2>" + ... + "<n>"
VarianceCalculation	variance	1	firstField: MEMBER	-1		DNE

## Totals

In Analysis the “Calculate Totals As...” aggregation replaces the existing aggregation. This is instead of Voyager’s Visual Totals that added additional rows and columns.

All Voyager visual totals are supported in Analysis but the behavior is different. Voyager could have multiple visual totals (aggregations), which spanned all rows and/or columns. Analysis can also have multiple aggregations... but it is one aggregation per measure.

Voyager’s Visual Totals feature is essentially redundant. In Analysis the aggregations are added to measures. For conversion purposes the first visual total that is on the \*opposite\* axis to the measures is applied to all measures. Any visual totals that are on the “measures” axis in the Voyager workspace are ignored.

## Linked Components / Sub-Analysis

In Voyager, changes in any linked component affected all other linked components. In Analysis the master analysis drives the sub-analysis but not vice versa. When converting a workspace to Analysis, the first crosstab (or first chart if there is no crosstab) will become the master analysis while the other linked components become the sub-analyses.

## Drill Through

Drill through to the underlying transactional data is not supported in Analysis 4.0.

## Link / Jumplink

In Voyager you could define a link to a Crystal Report or Web Intelligence report that passed context to the report. In Analysis 4.0 the Link feature has been renamed to Jumplink but current only links to Crystal Reports are supported.

## Connections

**No Voyager connections are converted. All connections must be manually recreated before the conversion process can start.**

For all Microsoft Analysis Services based providers, connections to the SSAS server are now defined using XML/A. Please refer to the “Analysis, edition for OLAP Administrator’s Guide”.

The manually created connections must have the same name in BI 4.x as they do in XI 3.x. During the conversion process, if a connection cannot be found the related workspaces will not be converted.

Voyager supports MSAS 2000, Oracle Hyperion Essbase, SSAS 2005/2008, EA, PCM, SSM, SAP BW 3.5/7.0 and local cubes. However in its first release Analysis will support SSAS 2005/2008 (using XML/A and not ODBO) plus SAP BW 7.0. Support for EA, PCM and SSM and Essbase is planned for a later release.

There will be no support for MSAS 2000, SAP BW 3.5 or local cubes. For the first release any workspaces that use Oracle Hyperion Essbase, MSAS 2000, SAP BW 3.5 or local cubes will not have any of the associated queries or components converted. If the workspace only contains these connections then the workspace will not be converted.

### **Connection Prompts**

There are two types of connection prompts; authentication prompts and connection variables that are used for SAP connections.

Connection prompts are not supported during conversion because the objective is to make conversion devoid of manual intervention while it is being performed.

For authentication prompts the Administrator is required to define the authentication for each connection as either SSO or Pre-defined during the conversion process. Once the conversion process is complete, the connection definitions can be edited and the authentication method changed to Prompt, if desired.

For connection variables that are optional or have default values, the default values will be used and the optional variables ignored.

For mandatory SAP connection variables that do not have a default, a workspace will be created with the connection plus appropriate crosstabs and charts, but this will be empty until the user first opens the workspace and chooses some values for the mandatory variables.

## Important Conversion Notes

The following is a summary list of important notes to consider when converting Voyager workspaces in XI 3.1 to Analysis workspaces in BI 4.

1. The name of the OLAP connections in BI 4.x must be identical to the OLAP connections used in XI 3.1.
2. Conversion will not work if there is only a single user license for the data provider. For example, when converting a Voyager workspace, which connects to SSAS, there will be one or more data connections to SSAS to run the Voyager workspace and there will also be the same number of data connections open to create the equivalent Analysis workspace.
3. Analysis makes use of several “safety belt” parameters to block excessive or large queries. The Administrator can modify these but it does mean that a query that ran successfully in Voyager may fail to initially run with Analysis because it exceeds a “safety belt” parameter. This will cause the conversion to fail for that workspace until the “safety belt” size is increased.
4. Voyager workspaces that use connections to SAP BW, which make use of mandatory variables and which do not specify default values, will fail. The workaround is to temporarily alter the query in the Query Designer to specify a default value to be used during conversion.
5. Some calculation functions are not available in Analysis, edition for OLAP. Calculations that depend on these unsupported functions will fail to convert.
6. Voyager dynamic calculations that are not associated with the Measures dimension will be ignored during conversion.
7. The behavior of dynamic calculations has changed with Analysis. The PERCENT CONTRIBUTION and RANK dynamic calculations are now calculated within each level, rather than overall.
8. The color palette used for conditional formatting in Analysis is different to the color palette used for exception highlighting in Voyager. The resulting colors in the converted workspace may be different to those used in Voyager.
9. The drill state of a hierarchy, and consequently the scroll state, is not converted. Although a hierarchy may have several branches expanded in a Voyager workspace, the converted workspace in BI 4.x will have the hierarchy expanded to level 1.
10. For SSAS there is no support for conditional filtering or Top N/Bottom N in Analysis.
11. If you decide to use the conversion as an opportunity to rename the OLAP connections before converting to BI 4.0, it is not sufficient to just rename the connection. Each associated Voyager workspace must be opened and saved otherwise they will fail to convert.
12. The Upgrade Manager imposes a 5 minute maximum time per object to perform the upgrade. Because the upgrade process requires us to physically run the query before we can start the actual upgrade process, it is possible that very large queries could take longer than 5 minutes to execute. In the event that this occurs, the upgrade of that Voyager workspace will be logged as a failure and noted that the failure was because the time to run the query exceeded 5 minutes.

## Appendix: Why XMLA for MS SQL SERVER Analysis Services Connectivity?

In previous versions of SAP BusinessObjects OLAP client tools, the connectivity to SSAS was performed using OLE DB for OLAP (ODBO). However a major disadvantage of this solution was that it was mandatory for the Multi-Dimensional Analysis Service (MDAS) of the SAP BusinessObjects Enterprise platform to be installed on a Windows server. This was a frustration for customers who otherwise deployed their entire SAP BusinessObjects product stack on Unix or Linux platforms.

There are many advantages of using XML for Analysis (XML/A) for connectivity to SSAS when using a Java web application such as Analysis, edition for OLAP:

- Open protocols allow more flexibility in implementation (e.g. choice of language, deployment configuration, OS platform and security methods).
- ODBO is Windows-only, native code that cannot be used directly in Java.
- Java-JNI creates a stack where it is very difficult to manage the memory of the application because a large amount of the processing is happening in native code. Errors in native code often affect the entire JVM reducing the overall stability of the system.
- Analysis, edition for OLAP is a pure Java application – the data drivers are implemented in Java code, similar to a JDBC Type 3 driver: [http://en.wikipedia.org/wiki/JDBC\\_driver](http://en.wikipedia.org/wiki/JDBC_driver)
- The complexity of bridging from Java to ODBO is now moved outside of the JVM, across a protocol that is designed for remote access.
- Load-balancing an HTTP server is a simpler problem and more robust than managing the performance of the JVM running native components.
- Our testing shows that the Analysis, edition for OLAP connectivity layer to SSAS is faster and more stable than the Voyager ODBO implementation.

## Related Content

[SAP BusinessObjects Analysis, edition for OLAP](#)

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