Senturus Analytics Connector User Guide Cognos to Tableau

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Overview

This guide describes how the Senturus Analytics Connector is used from Tableau after it has been installed and configured.

Please refer to the Installation and Configuration Guide for instructions on installing and configuring the Analytics Connector.

The Analytics Connector has been tested against different versions of Tableau, including both Tableau Desktop and Tableau Server on Windows from version 9.3.

ODBC vs SQL Server Connection

Starting from version 5.0.8, you can connect from Tableau Desktop, Tableau Server and Tableau Bridge to Analytics Connector via SQL Server connection.

If you have old workbooks and/or server-side data sources, you may still use ODBC connections, all your old workbooks and data sources will continue working. And you can still use ODBC connection in new workbooks if you wish.

Comparing to ODBC connection, using SQL Server connection gives you following advantages:

- 1. No need to install Analytics Connector ODBC client¹.
- 2. Use Windows authentication from Tableau Desktop/Server to Analytics Connector server to Cognos.²

To use custom Data Connector, you need to install Senturus Analytics Connector ODBC client on the computer where Tableau Desktop and/or Tableau Server will be making connection from. The latest ODBC client can be found at <u>Senturus Analytics Connector - Customer Resources</u>.³

Senturus Analytics Connector ODBC client is a customized PostgreSQL ODBC driver⁴, that provides several new features, for example you can select database name from a drop-down list.

¹ You still need to install SQL Server Native Client 11 or above on your client computer.

² Both Tableau Desktop/Server and Cognos server must be secured by the same Active Directory service.

³ ODBC client is automatically installed when you are installing Senturus Analytics Connector server. So, you don't have to install ODBC client separately on the same computer.

⁴ Tableau installer comes with its own PostgreSQL ODBC driver, but that driver is an older version that is not compatible Senturus Analytics Connector server.

Connecting to Cognos from Tableau

You can use either "Microsoft SQL Server" or "Other Database (ODBC)" connection to connect Tableau to Analytics Connector server.

Connect	Installed Connectors (76)	IBM PDA (Netezza)	Spark SQL
Search for Data	Actian Matrix	Impala	Splunk
	Actian Vector	Intuit QuickBooks Online	Teradata
Tableau Server	Alibaba AnalyticDB for MySQL	Kognitio	Teradata OLAP Connector
	Alibaba Data Lake Analytics	Kyvos	TIBCO Data Virtualization
ToaFile	Alibaba MaxCompute	LinkedIn Sales Navigator	Vertica
Microsoft Excel	Amazon Athena	MapR Hadoop Hive	Web Data Connector
Text file	Amazon Aurora for MySQL	MariaDB	
JSON file	Amazon EMR Hadoop Hive	Marketo	Other Databases (JDBC)
Microsoft Access	Amazon Redshift	MarkLogic	Other Databases (ODBC)
PDF file	Anaplan	Microsoft Analysis Services	
Spatial file	Apache Drill	Microsoft PowerPivot	
Statistical file	Aster Database	Microsoft SQL Server	Additional Connectors (11) ①
More	Azure Data Lake Storage Gen2	MonetDB	Actian ODBC by Actian
	Azure SQL Database	MongoDB BI Connector	Elasticsearch by Elastic
	Azure Synapse Analytics	MySQL	Incorta Connector by Incorta
Amazon Redshift	Box	OData	Kyligence Connector by Kyligence
Microsoft SOL Server	Cloudera Hadoop	OneDrive	MarkLogic by MarkLogic
PostgreSOI	Databricks	Oracle	Ocient JDBC by Ocient
Other Databases (ODBC)	Datorama	Oracle Eloqua	Qubole Hive by Qubole
More >	Denodo	Oracle Essbase	Salesforce CDP by Salesforce
WOI C	Dremio	Pivotal Greenplum Database	SQream DB by SQream Technologies
Saved Data Sources	Dropbox	PostgreSQL	Stratio Crossdata by Stratio BD
	Esri ArcGIS Server	Presto	Yellowbrick by Yellowbrick Data
Sample - Superstore	Exasol	Progress OpenEdge	
World Indicators	Firebird 3	Qubole Presto	
	Google Ads	Salesforce	
	Google Analytics	SAP HANA	

Use Microsoft SQL Server Connection⁵

To begin, select the More... option under To a Server, then select Microsoft SQL Server.

Microsoft SQL Server	×
General Initial SQL	
Server win03.example.com	
Database GO (query)	
Authentication Use a specific username and password	*
Username cognos	
Password Optional	
Require SSL	
Read uncommitted data	
	Sign In

Above is a Microsoft SQL Server connection dialog. You need to provide following information:

- 1. The Analytics Connector server (not Cognos server) name or IP.
- 2. Optionally, type in the user-friendly database name that maps a Cognos package or data module.
- 3. Select either windows or user/password authentication and provide username (Cognos username) and password as needed.
- 4. If your Analytics Connector Server is SSL secured, you can optionally check "Require SSL" box.

⁵ Make sure you have installed SQL Server Native Client 11 or above in order to use SQL database connection. The download can be found here: <u>https://www.microsoft.com/en-us/download/details.aspx?id=50402</u>

After clicking on "Sign in" button, Tableau will connect to Analytics Connector Server and bring back Cognos objects and represent them as tables, as below.



Use ODBC Connection

To begin, select the More... option under To a Server, then select Other Databases (ODBC).

Select the radio button next to **Driver**, select *Senturus Analytics Connector* from the list, then click **Connect**.

Other D	atabases (ODBC)
Connect Usin Generic ODB(source name) on Tableau So	9 C requires additional configuration for publishing to succeed. Select DSN (data for cross-platform portability. A DSN with the same name must be configured rver.
O DSN:	· · · · · · · · · · · · · · · · · · ·
Oriver:	Senturus Analytics Connector
	Connect

Enter Analytics Connector server name or IP, Port number, User Name and Password.

Click **Load** to load a list of configured databases the user has access to on the specified server. Select a Database from the loaded list, then click **OK**.

Senturus Analytics Connector		\times
Please supply any missing information	n required to connect.	
Server: localhost	Port: 5432	
SSL Mode: disable	Command Timeout:	
User Name: cognos	Password:	
Database: GO (query)	✓ Load	
	0K Cance	

Click **Sign In** to complete the connection. You will then see the Tableau Data Source tab for this connection.

-Connection Attribut	es		
Server:	localhost	Port:	5432
Database:	GO Sales (query)		
Username:	administrator		
Password:	•••••		
String Extras:	SSLmode=disable;ReadOnly=0;Protocol owOidColumn=0;RowVersioning=0;Shov 100;UnknownSizes=0;MaxVarcharSize= =8190;Debug=0;Comm.dg=0;UseDeda rchar=1;UnknownsAsLongVarchar=0;Bo traSysTablePrefixes=;LFConversion=1; IsMinus1=0;B1=0;BtvasAsLongVarBinar e=1;LowerCaseIdentifier=0;XaOpt=1	=7.4;FakeOidI vSystemTables 255;MaxLongV reFetch=0;Tes JoldsAsChar=1; JpdatableCurs y=1;UseServer	ndex=0;Sh =0;Fetch= archarSize ctAsLongVa arse=0;Ex ors=1;True SidePrepar

Sign In

Tableau will connect to Analytics Connector Server and bring back Cognos objects and represent them as tables, as below.

Connections	Add
localhost Other Databases (ODBC)	
Database	
GO Sales (query)	.
Schema	
Sales (query)	-
Table	
Enter table name	+ م
Exact Contains	Starts with
⊞ Branch (Sales (query).Branch)	
CALCULATIONS (Sales (query).CALCULATIONS	i)
Order (Sales (query).Order)	
Order method (Sales (query).Order method)	
Parameterized Products (Sales (query).Parameter	erized Products)
Parameterized Products 2 (Salry).Parameteriz	ed Products 2)
Products (Sales (query).Products)	
⊞ Retailer type (Sales (query).Retailer type)	
Ⅲ Retailers (Sales (query).Retailers)	
Ime (close date) (Sales (query). Time (close dat	e))
Ⅲ Time (Sales (query).Time)	
Ime (ship date) (Sales (query). Time (ship date))
User (Sales (query).User)	
📆 New Custom SQL	

Create Data Source

After connecting successfully, the database, schema and tables will show on the **Data Source** tab.

The full list of schemas and tables appears in the **Table** section. To filter the list, type letters of your desired schemas/tables into the search field.

Schema		
Sales (query)	•	
Table		
Enter table name	🕈 م	
\odot Exact \bigcirc Contains	○ Starts with	

If you are using version 2020.2 or newer, Tableau Desktop will create a logical table when you add a database table to the canvas and will let you define relationships between logical tables. But in most cases, you want to define dummy joins in Tableau so that you can use Cognos built-in relationships. Click on the drown down array and select "Open..."

□- Sales (Sales (query).Sales) (G

Sales	
	Open
	Rename
	Remove

$* \leftarrow \rightarrow \square \bigcirc$	⊖• Sa	les (Sales (qu	ery ca	onnection Live C	Extract	Filters 0 Add
Connections Add						
Cognos_Senturus Other Databases (ODBC)	Sales			Branch		
Database						
Select Database 💌				Products		
		Join				×
Schema						
Sales (query) 🔻		Inner	Left		Right	Full Outer
Table		Data Sourc	e		Pro	ducts
Enter table name 🛛 🔎 🛉	🖽 🔳 Sor	Aaa Link		=	AAA LINK (Products)	/s
● Exact ○ Contains ○ Starts with	#	Add new join clause				
AAA_CALCULCULATIONS)	Branch					
Branch (Salesuery).Branch)	AAA LINK (B	-				
I Order (Sales (query).Order)						
I Order methodrder method)						
Parameterizeed Products)						
Products (Salry).Products)						
III Retailer type (Retailer type)					-	
Retailers (Salry).Retailers)			Upda	te Now		
Sales (Sales (query).Sales)						
Sales staff (Say).Sales staff)			Automatio	cally Update		
Ⅲ Time (close da (close date))						
Time (Sales (query).Time)						

Then drag or double click the more tables into the canvas.

Link Columns and Dummy Joins

Tableau requires joins between the tables in a data source, but link columns are usually not available in the schemas converted from Cognos packages. To resolve this limitation, the Analytics Connector creates a link column on each table named *AAA_LINK*⁶. The link column name can be changed using the Configuration Utility.

Tableau will automatically join the tables using the link columns, but the ODBC driver will ignore them when passing the queries to Cognos.

Custom Joins

As mentioned previously, Tableau will automatically join on the link columns the Analytics Connector creates. Usually, you will not want to change these joins because you want to leverage the underlying Cognos relationships. However, you can create custom joins to build Tableau

⁶ AAA_LINK is the default dummy column name, but your Senturus Analytics Connector server administrators can change it via Data Source Configuration tool.

models that your Cognos implementation does not include.



Using the example shown above, you can change the automatic join between *Products* and *Products1* to a full outer join on the "Product Number" column. This type of custom join will be honored by the Analytics Connector.



Additionally, the Analytics Connector will split the five tables into two sub queries. The first sub query contains *Sales_target* and *Products* and the second sub query has *Products1, Sales* and *Time*. The results of the two sub queries will be joined together by the Product Number column.

Relationships

One of the benefits of using Tableau relationships is that you can avoid writing Level of Detail (LOD) expressions to handle multi-fact, multi-grain data.

Taking the "Sales vs. Sales Target" data for example, you can define two logical tables first, then set up a relationship between them as below.

⊖- Sales vs. Sales Target

() Sales			Sales target	
Edit Relationship				
How do relationships diffe	r from joins? L	earn more		
Sales			Sales target	
# Product line code		=	# Product line code (Products1)	
# Product type code		=	# Product type code (Products1)	
# Year		=	# Year (Time1)	
			the Marshield (Time 4)	
# Month (numeric)		=	# Month (numeric) (Time1)	
 # Month (numeric) (+) Add more fields 		=	# Month (numeric) (TimeT)	
# Month (numeric) (+) Add more fields V Performance Options		=	# Month (numenc) (Time1)	
Month (numeric) Add more fields Performance Options These settings help Table recommended, if you are	eau optimize qu n't sure what to	= eries during choose. Le	analysis. The default settings are arn more	
Month (numeric) Add more fields Performance Options These settings help Table recommended, if you are Cardinality	eau optimize qu n't sure what to	= eries during choose. <u>Le</u>	# Month (numeric) (Time 1) analysis. The default settings are arn more	
Month (numeric) Add more fields Performance Options These settings help Table recommended, if you are Cardinality Many	au optimize qu n't sure what to	= eries during choose. <u>Le</u>	month (numeric) (nime i) analysis. The default settings are arn more One	
Month (numeric) Add more fields Performance Options These settings help Table recommended, if you are Cardinality Many Referential Integrity	eau optimize qu n't sure what to	= eries during choose. <u>Le</u>	# Month (numeric) (Time 1) analysis. The default settings are arn more One	

Cognos Calculations

The Analytics Connector supports working with Cognos Calculations in Tableau.

Calculations in Cognos come across in a special table named AAA_CALCULATIONS or _CALCULATIONS_ under the appropriate schema. The calculations table name can be changed using the **Configuration Utility**.

The table will also contain a link column. The special calculation table is joined to other tables using the link column like any other table in the data source.

⊖ Sales (Sale)	s (query).Sales) (GO Sales (quer
Sales	AAA_CALCULATIONS

Data Source Best Practices

- Unless absolutely needed, always use joins (joined by dummy link columns) in a single logical table. If your Cognos model missed a relationship, you may define a join using columns other than link columns. Or if you have a multi-fact, multi-grain data, you may add two logical tables and create relationship using columns other than link columns.
- Always add fact table(s) first in logical tables.
- Do NOT click **Update Now** on the Data Source tab or you will trigger a large query that will take a very long time to run.
- Leave the connection set to Live so that queries are passed to Cognos for execution under the authenticated user.
- You can add Filters using the **Filters Add** feature in the top right corner of the widow. Appropriate filters can improve query performance when designing the visualizations.



 If you have duplicate columns in a table, the table will be marked as "(invalid)" and will be unusable in your data source. You will need to correct your Cognos model to resolve a duplicate column issue. Review the java.log file found at {Analytics Connector Install Folder}\Log for the name of the duplicated column.



Warning When Switching from Data Source Tab

When you switch from the Data Source tab to the Sheet tab, the below warning may appear.



Tableau uses several special features to optimize queries, but the Analytics Connector and Cognos do not support all of them. This dialog box is only a warning and your workbook will function correctly.

To prevent this pop up from appearing again, check *Do not show again for this data source*, then click **OK**.

You are now able to design your visualization using the Cognos Dimensions and Measures in Tableau.

Parameterized Tables and Reports

Regular database tables do not have or support parameters. But when working with a Cognos parameterized query subject or a report, users will be prompt to answer parameter values before it can be executed.

Analytics Connector supports parameterized tables and reports by utilizing Tableau "Custom SQL" feature and two special functions.

Working with Parameterized Tables

To use a parameterized table in a Tableau workbook and pass parameter values, use the Tableau **New Custom SQL** feature.

To begin, select a Database then double click **New Custom SQL** to launch the **Edit Custom SQL** window. Enter the SQL to execute.

Connections	Add	
Cognos_Senturus Other Databases (ODBC)		
Database		
Select Database	Edit Custom SQL	X
Schema		
Select Schema		
Table		
Enter table name		
Exact O Conta		
AAA_CALCULATIONS (Filter.		
AAA_CALCULATIONS (Sales		
🏢 Assigned staff (Returned item		
📰 Branch (Inventory (query).Bra		
📰 Branch (Product forecast (qu		
📰 Branch (Sales (query).Branch		
📰 Briefing Book (Sample Report		
🔢 Horizontal Pagination (Sampl		
📰 Inventory (Inventory (query).I	Preview Results Insert Parameter 🔻	OK Cancel
🔢 No Data (Sample Reports.No	Data)	
📰 Order (Returned items (query).Order)	
🔢 Order (Sales (query).Order)		
📰 Order Invoices - Donald Chow	Donald Chow, Sales Person)	
_		
Rev Custom SQL		
Data Source Sheet 1	₽ . Ŭ .	

Using the *OpenTable* function, you can pass parameters to a parameterized Cognos table. Example passing static valued parameters:

```
OpenTable(

"Sales (query)"."Parameterized Products",

"p_product line code"="[991, 992, 993, 994, 995]",

"p_Product Line"=" 'Golf Equipment'",

"p_Date"="{d '2010-01-01'}",

"p_Datetime"="'2010-01-01 19:00:00'"

)
```

Click **Preview Results...** to run the query. The results will display in a new window.

Edit Custom SQL				×		
OpenTable("Sales (que "p_product "p_Product "p_Date"="{ "p_Datetime }	ry)"."Parameter line code"="[95 Line"=" 'Golf F d '2010-01-01'] "="'2010-01-01	rized Products", 91, 992, 993, 99 Equipment'", ", 19:00:00'"	94, 995]",	ere		
	III View Data: GO Sal	es (query)				
	15 rows =>					
	Discontinued date Introduction date Product					
	Null 1/10/2010 12:00:00 AM Course Pro Golf and Tee Set					
	Null	1/15/2010 12:00:00 AM	Course Pro Umbrella	Course Pro		
	Null 12/15/2009 12:00:00 AM Course Pro Golf Bag					
	Null 12/15/2009 12:00:00 AM Hailstorm Steel Irons					
Null 12/27/2009 12:00:00 AM Course Pro Gloves						
Null 12/10/2009 12:00:00 AM Course Pro Putter						
Null 12/10/2009 12:00:00 AM Lady Hailstorm Steel Irons						
Null 12/27/2009 12:00:00 AM Hailstorm Titanium Woods Set						
Preview Results Null 12/10/2009 12:00:00 AM Hailstorm Titanium Irons						
	Null	12/18/2009 12:00:00 AM	Lady Hailstorm Titanium Irons	Hailstorm		

The first parameter is *"[schema name]"*. *"[table name]"* of the Cognos parameterized table. This is followed by zero or more Cognos parameter name-value pairs separated by commas.

Optionally, you can replace the static values with Tableau parameters to create dynamic values.

For example:

- Highlight the date static value.
- Select the Insert Parameter button, then Create a New Parameter.
- Define the Tableau date parameter and click OK.

It is important that you select the correct Data type for the parameter or the SQL may error.

Edit Custom SQL			×		
OpenTable("Sales (qu "p_product "p_Product "p_Date"=" "p_Datetim)	ery)"."Parama line code"=' Line"=" 'GoJ (d '2010-01-0 e"="'2010-01-	eterized Products", "[991, 992, 993, 994, 995]", Lf Equipment'", Dl']", -01 19:00:00'"	ere		
	Create Parameter		×		
	Name: My Date				
	Properties				
	Data type:	Date 👻			
	Current value:	1/1/2010			
	Display format:	2010-01-01 ~			
	Allowable values:	All List Range			
Preview Results	-	0	K Cancel		

The Tableau parameter can then be shown on the visualization or dashboard for user interaction.

Dimensions			
Discontinued date Introduction date	Filters	Sheet 1 Drop field here	My Date 1/1/2010
Abc Product brand Abc Product color Abc Product description Abc Product line Abc Product line Abc Product size Abc Product size Abc Product type Abc Measure Names	Marks T Automatic Add to Sheet Show Parameter Control Cut Conv		
Measures # AAA_LINK # Base product number # Product brand code # Product color code # Product line code # Product line code # Product size code # Product size code # Product type code # Number of Records # Measure Values Parameters My Date	Copy Edit Duplicate Rename Hide Delete Create Default Properties Folders Replace References Describe	Drop field Drop field here here	

You can use more than one OpenTable function in a Tableau query, as long as each one is contained in individual Custom SQL object. Like other tables, they are joined using the generated Link Columns which are then ignored at execution time.

You can also mix parameterized tables with other tables in one Tableau data source. These tables will also join using the generated Link Columns. Example advanced query:

Select "Products"."Product line", "Products"."Product type", Sum("Sales"."Revenue") as "Revenue" From OpenTable("Sales (query)"."Parameterized Products", "p_product line code"="[991, 992, 993, 994, 995]", "p_Product Line"=" 'Golf Equipment'", "p_Date"="{d '2010-01-01'}", "p_Datetime"="'2010-01-01 19:00:00''') as "Products" join "Sales (query)"."Sales" as "Sales" on ("Products"."AAA_LINK" = "Sales"."AAA_LINK") Group by "Products"."Product line"

Working with Reports

To use a Report in a Tableau workbook and pass parameter values, use the Tableau **New Custom SQL** feature.

To begin, select a Database then double click **New Custom SQL**. Enter the SQL to execute.

Connections	Add		
Cognos_Senturus Other Databases (ODBC)			
Database	Edit Custom 201		~
Select Database			~
Schema			
Select Schema			
Table			
Enter table name			
Exact O Conta			
 AAA_CALCULATIONS (Filter AAA_CALCULATIONS (Select Assigned staff (Returned item Branch (Inventory (query).Bra Branch (Product forecast (query).Branch Branch (Sales (query).Branch Briefing Book (Sample Report Horizontal Pagination (Sampl. 			
Inventory (Inventory (query).	Preview Results Insert Parameter 🔻	OK	Cancel
III No Data (Sample Reports.No I	Jata)		
Order (Returned items (query)	(.Order)		
Order (Sales (query).Order) Order Invoices - Donald Chow	Donald Chow, Sales Person)		
Data Source Sheet 1	₽ ₊ ¤ ₊		

Using the *RunReport* function, you can pass parameters to a Cognos Report.

Example passing static valued parameters:

RunReport (

```
"Connector Reports"."Parameter Report",
"p_product line code"="[991,992,993,994,995]",
"p_Product Line"="'Golf Equipment'",
"p_Category"="['Books', 'Electronics', 'Movies']",
"p_Date"="{d '2010-01-01'}",
```

```
"p_Datetime"="2010-02-01 19:00:00"
```

```
)
```

Clicking the **Preview Results...** button will run the query and display the results in a new window.

Edit Custom SQL RunReport ("Connecto "p_produc "p_Produc "p_Date"= "p_Dateti)	r 1 t 1 t 1 me'	Reports".' line code' Line"="'Go d '2010-02 "="2010-02	"Parameter "="[991,992 olf Equipme L-01'}", 2-01 19:00:	Report", ,993,994,995 nt'", 00"	.]",	×	:
		View Data: GO) Sales (query)				
	41	ows	+				
	F	Product line	Product type	Product line code	Product type code	Revenue	Year
		Colf Equipment	Trops	995	968	4 654 281 10	2 0 10
		Golf Equipment	Woods	995	969	5,138,304.03	2,010
		Golf Equipment	Putters	995	970	2,459,044.00	2.010
		Golf Equipment	Golf Accessories	995	971	864,227,83	2.010
Preview Results							

The first parameter is "[schema name]"."[table name]" of the Cognos Report. This is followed by zero or more Cognos parameter name-value pairs separated by commas.

Optionally, replace the static values with Tableau parameters to create dynamic values.

Example:

- Highlight the date static value.
- Click the Insert Parameter button, then Create a New Parameter.
- Define the Tableau date parameter and click OK.

It is important that you select the correct Data type for the parameter or the SQL may error.

Edit Custom SQL		×	
RunReport ("Connector Reports"."F "p_product line code"= "p_Product Line"="'G "p_Date"="[d'2010-01- "p_Datetime"="2010-02-)	arameter Report", "[991,992,993,994,995]", f Equipment'", 01']", 01 19:00:00"	v hidden fields	
	Create Parameter	:	×
	Name: My Date Properties Data type: Date Current value: 1/1/2010 Display format: 2010-01-01	Comment >>	
Preview Results Insert Parameter	Allowable values:	OK Cancel	

The Tableau parameter can then be shown on the visualization or dashboard for user interaction.

Custom_SQL_Query (G		⊞ Rows		
Dimensions IIII ₽ Abc Product line Abc Product type	Filters	Sheet 1	1	My Date 1/1/2010
Abc Measure Names			Drop field here	
Measures # Product line code # Product type code # Revenue # Year -# Number of Records # Measure Values	Marks T Automatic Image: Color Image: Color Image: Color Size Image: Color Image: Color Image: Color Image: Co	Drop field here	Drop field here	
Parameters				
	Add to Sheet Show Parameter Control			
O Data Source She	Cut Copy			14 4 b bi 💷 📰

Function Syntax

Syntax

```
Both OpenTable and RunReport function adopt following syntax:
OpenTable ( "Schema Name"."Table Name"(, "Parameter"="value", ...) )
```

The first parameter is a table identifier, using standard SQL syntax. All identifiers are case insensitive and the schema name can be omitted if the table name is unique cross schemas.

The second, if any, and following parameters are name-value pairs, separated by commas. Name and values should be surrounded by double quotation marks.

Parameters

Use parameter name in place of "Parameter" for the Cognos connector.

Values

All values should follow SQL/ODBC standard.

Only plain string representation is allowed for numeric values. Formatted representations such as **1,200.00** with thousand separators, **(15)** for -15, or **50%** for .5 are not supported.

For string values, single quotation marks are used around the value. For example, 'Golf Equipment' or 'Sam''s Club'.

For date/time/timestamp values, use the ODBC standard format. For example {d '2010-01-01'} or ISO 8601 standard format, 'YYYY-MM-DD' for date, 'hh:mm:ss' for time and 'YYYY-MM-DD hh:mm:ss' for timestamp.

An array of values is passed using brackets. For example:

• "product line code"="[991,992,993,994,995]"

The syntax for a Range parameters is represented by a 2 element array. For example:

- "YearRange"="[,2019]" All years less than or equal to 2019
- "YearRange"="[2015,]" All years greater than or equal to 2015
- "YearRange"="[2015,2019]" Years between 2015 and 2019

Character escaping

Certain characters must be escaped.

For single quotes within a string value, use two single quotes to escape a single quote inside the string.

Double quotes in parameter name and values need to be escaped with two double quotes.

Passing multiple values to a parameter

A Cognos parameter may accept multiple values, for example [Product line code] in (?p_Product line code?). To specify multiple values in your function, put multiple values in a pair of square brackets ([]) and separate each value by a comma (,) just like CSV format.

Using Tableau parameters

You can use Tableau parameters in place of literal values but take the following notes:

- Tableau will replace the parameter name with a formatted string when executing a string. For example, Tableau will put single quotes around string values, escape single quotes with two single quotes in string values, and format date value using ODBC format. You do not need to "format" them in a function call.
- Tableau will not escape double quotes, so you need to escape them when you provide values to Tableau parameter.
- Tableau does not support multiple value parameters. To pass multiple values to one Cognos parameter, define multiple parameters in Tableau and put them in your function. For example "param"="[<Parameters.p1>, <Parameters.p2>, <Parameters.p3>]".

FAQs

Q: What happens when the underlying Cognos model or metadata changes?

A: If a column or table is removed or renamed in Cognos, Tableau will mark the old measure(s) and dimension(s) as invalid when a saved workbook is opened. The user can then decide how to correct the workbook:

- The user can use Tableau's **Replace References** feature to reassign all occurrences with a new, valid column.
- The user can remove references to the old column from the workbook.

If table(s) or column(s) are added, Tableau will display the new column the next time it connects to the data source. This typically happens when a workbook is opened or when a data source is refreshed.

There is nothing specific to the Analytic Connector that changes this behavior of Tableau. For more information on Tableau Data Sources, see this Tableau article:

https://onlinehelp.tableau.com/current/pro/desktop/en-us/refreshing_data.htm

Q: How does a SQL Server nullable uniqueidentifier column work with Cognos and the Analytics Connector?

A uniqueidentifier is typically mapped to a varchar(50) or nvarchar(50) in Cognos models. An issue arises when a nullable uniqueidentifier has a null value. When the output is sent to CSV, the null becomes a '0' which isn't a valid uniqueidentifier and will cause an error.

This can be worked around by adjusting the model to "CAST([uniqueidentifier_column] as nvarchar(50))" instead of just "[uniqueidentifier_column]".

This can also be worked around at the Tableau level using the Custom SQL feature and applying the same "CAST([uniqueidentifier_column] as nvarchar(50))" instead of just "[uniqueidentifier_column]" as part of the SELECT statement.

CONTACT US

The latest version of the Analytics Connector along with related documentation and contact information can be found at https://www.senturus.net/connector-download/.

If you have any additional questions, please contact us at CustomerSupport@senturus.com.