



TOC

Logi Symphony 24	15
Connect to Managed Dashboards and Reports Data in Symphony 24	15
Quick Start Reference - Connect to Managed Dashboards and Reports Data	16
Data Connectors	16
Security	18
Connect to Data and View it on a Dashboard	19
Connecting to Data	19
Create a New Data Connector	19
Choose a Name and Folder Location	21
Select a Data Provider	21
Settings	23
Test the Connection	25
Save	26
Viewing Data	28
Create a New Dashboard	28
Find Your Data Connector	30



Drag a Table of Data To the Canvas	32
View the Dashboard	33
Selecting Structures For Data Connector Discovery	35
Select Structures	35
Connect to Data and View it on a Dashboard	40
Connecting to Data	40
Create a New Data Connector	40
Choose a Name and Folder Location	42
Select a Data Provider	42
Settings	44
Test the Connection	46
Save	47
Viewing Data	49
Create a New Dashboard	49
Find Your Data Connector	51
Drag a Table of Data To the Canvas	53
View the Dashboard	54
Drag and Drop an Excel File	56



Drag an Excel File To the Explore Window	56
Drag an Excel File Directly To the Canvas	58
Remove a Column From the Table	59
Replace Date Column With Time Hierarchy Level	61
Re-Visualize	62
Authentication Methods	65
Authentication Methods	65
Server Windows Credentials	66
SQL Server Authentication	66
Specified Windows Credentials	67
Impersonated Windows Credentials	68
Azure Active Directory	68
Online Credentials	68
Data Connector Reference	70
Managed Dashboards and Reports Data Connectors	70
Visual Data Discovery Data Connectors	72
Connecting to Access	75
Drag and Drop an Access File	75



Connect To the Access File	77
Options	79
Advanced	80
Jet OLEDB	80
Security	81
Manage the Amazon Redshift Connector	83
Connecting to Amazon Redshift in Visual Data Discovery	83
Feature Support	83
Connect to Amazon Redshift in Visual Data Discovery	84
Verify the MTU Size of Symphony	84
Configure and Reference the JDBC Driver	85
Connect to Amazon Redshift in Managed Dashboards and Reports	85
AWS Account	85
Data Connector Settings	85
Connecting to Azure Table / Azure Cosmos DB	88
Azure Resource	88
Azure Storage Tables	88
Azure Cosmos DB	88



Data Connector Settings	89
Manage the BigQuery Connector	92
Feature Support	92
Connect to BigQuery in Visual Data Discovery	93
Authorize the BigQuery Connection	93
Connect to BigQuery Using OAuth	95
Scheduled Override Options	96
Connect to Google BigQuery in Managed Dashboards	97
Setup	97
Create or Choose a Project	97
Enable the BigQuery API	98
Service Account Credentials	100
P12 file type	100
Enable Billing	101
Public Datasets	101
New Data Connector	102
Advanced	104
Connecting to Exasol	105



Drivers	105
Data Connector Settings	105
Connecting to Excel	108
Drag and drop an Excel file	108
Connect to an Excel File	108
Define Tables and Columns	112
Read Multiple Files	118
Excel Connection Issues	121
Issue: Error Occurs When Connecting to Excel File	121
Converting a String to Date/Time Data Type	123
Connect to a Flat File or Excel File	123
Setting Up the Date/Time Data Type	124
Manage File Uploads	128
Upload a New File in Visual Data Discovery	128
Edit an Existing File in Visual Data Discovery	131
Delete a File	134
API Endpoints	134
Work with the Upload API	137



Example: Append Data	137
Example: Clear Previously Uploaded Data	137
Feature Support	137
Connecting to Flat Files in Managed Dashboards	138
Drag and Drop a Flat File	138
Connect to a CSV File	140
Define Columns	144
Read Multiple Files	150
Flat File Connection Issues	153
Issue: 404 Not Found Error Occurs When Drag and Drop Flat File	153
Connecting to Generic Web Data Sources	154
Set Up the Data Connector	154
Connection Script	156
Connection Properties	156
Get Page Script	157
CreateRequest Method	157
Request Properties	157
ExecuteGet Method	158



ExecutePost Method	158
Response Properties	159
Define Parameters Script	160
Cleanup Script	160
Examples	161
Basic Example	161
Symphony REST example	161
OData Example	162
Advanced Example	163
ConversionHelper	164
CalculateMd5Hash Method	164
GetJsonValue Method	164
GetXmlValue Method	165
ToBase64String Method	166
Transform the Result	166
Connecting to Google Analytics	168
Google Analytics Account	168
Setup	169



Cloud Console Project	169
Enable the Analytics API	170
Service Account Credentials	175
P12 File Type	176
Authorization	176
New Data Connector	179
Display Google Analytics Data	181
Connecting to Google Sheets	184
Setup	186
Create or Choose a Project	186
Enable the Drive and Sheets APIs	186
Service Account Credentials	189
P12 File Type	191
Authorization	191
Data Connector	192
Connecting to IBM DB2	195
Connecting in Managed Dashboards and Managed Reports	195
Data Connector Settings	195



Connecting to JDBC	198
Install	198
Connect	199
Driver Properties	201
Driver Class Name	202
Use PrepareStatement	202
Fetch Size	202
Date Trim Expression	203
Java VM Path	204
Connecting to Microsoft Dataverse	206
Register an Azure AD Application	206
Add an Application User to Dynamics	206
Data Connector Settings	206
Manage the MySQL Connector	209
Feature Support	209
Connect to MySQL in Visual Data Discovery	210
Connect to MySQL in Managed Dashboards	210
Data Connector Settings	211



Connecting to ODBC	214
Connect Using ODBC	215
Using a System DSN	216
Without DSN	216
Advanced Options	218
Specify Driver Capabilities	218
Data Source Name (DSN)	222
DSN-less Connections	222
Connecting to OData	223
Connect to the OData Sample Service	223
Connect to SharePoint	225
Advanced Properties	226
Using Query Options	226
Connecting to Pardot	229
Set Up Pardot	229
Create the Data Connector	229
Connecting to SharePoint Lists and Excel Services	232
Connect to a SharePoint List	232



SharePoint Lists	232
SharePoint Online List	234
Connect to SharePoint Excel Services	234
Define Structure	237
Manage the Snowflake Connector	238
Feature Support	238
Connect to Snowflake for Visual Data Discovery	239
Snowflake Time Field Conversion	240
Configure the Snowflake Clustering Depth Threshold	240
Connect to Snowflake Using OAuth	240
Connecting to Snowflake in Managed Dashboards	241
Data Connector Settings	242
Connecting to SSAS	245
Connect to Analysis Services	245
Impersonation = None	247
Impersonation = Effective Username	248
Impersonation = Roles	250
Custom Data and Custom Attributes	250



Localization	250
Using SSAS Roles Impersonation	252
Set Up Roles in SSAS	252
Set up User Groups and Accounts in Symphony	257
Create a New Project and Dashboard	259
View the Dashboard as Each User	261
Manage the Teradata Connector	264
Feature Support	264
Connect to Teradata in Data Discovery	265
Connecting to Teradata in Managed Dashboards	265
Install the Driver	265
Linux	266
Create a Data Connector	266
Manage the Vertica Connector	268
Feature Support	268
Connect to Vertica in Data Discovery	269
Connecting to Vertica in Managed Dashboards	269
Install the Driver	270



Create the Data Connector	270
Connecting to XML Files	272
Drag an XML File	272
Create a Data Connector	273
Settings	275
XML Namespace	275
Schema Location	275
Define Tenant Access to the <GLOBAL> Project	277
Remove Access to the <GLOBAL> Project for all Tenants	277
Other Database Connection Issues	279
Issue: Data cube job or database query never ends or ends in error	279



- Archive of documentation for Logi Symphony v24

Logi Symphony 24

Connect to Managed Dashboards and Reports Data in Symphony 24



Quick Start Reference - Connect to Managed Dashboards and Reports Data

This applies to: *Managed Dashboards, Managed Reports*

Data Connectors

- [Connect to Data and View it on a Dashboard](#)
- [Selecting Structures For Data Connector Discovery](#)
- [Connect to Data and View it on a Dashboard](#)
- [Drag and Drop an Excel File](#)
- [Authentication Methods](#)
- [Data Connector Reference](#)
- [Connecting to Access](#)
- [Manage the Amazon Redshift Connector](#)
- [Connecting to Azure Table / Azure Cosmos DB](#)
- [Manage the BigQuery Connector](#)
- [Connecting to Exasol](#)
- [Connecting to Excel](#)
- [Excel Connection Issues](#)
- [Converting a String to Date/Time Data Type](#)



- [Manage File Uploads](#)
- [Flat File Connection Issues](#)
- [Connecting to Generic Web Data Sources](#)
- [Connecting to Google Analytics](#)
- [Connecting to Google Sheets](#)
- [Connecting to IBM DB2](#)
- [Connecting to JDBC](#)
- [Connecting to Microsoft Dataverse](#)
- [Manage the MySQL Connector](#)
- [Connecting to ODBC](#)
- [Connecting to OData](#)
- [Connecting to Pardot](#)
- [Connecting to SharePoint Lists and Excel Services](#)
- [Manage the Snowflake Connector](#)
- [Connecting to SSAS](#)
- [Using SSAS Roles Impersonation](#)
- [Manage the Teradata Connector](#)



- Archive of documentation for Logi Symphony v24

- [Manage the Vertica Connector](#)
- [Connecting to XML Files](#)
- [Other Database Connection Issues](#)
- [SQL Server Data Connection Issues](#)
- [SSAS Data Connection Issues](#)

Security

- [Define Tenant Access to the <GLOBAL> Project](#)
- [Data Security](#)
- [Feature Security](#)
- [Organizational Security](#)
- [Seat Types](#)
- [Configuration Settings](#)



Connect to Data and View it on a Dashboard

This applies to: *Managed Dashboards, Managed Reports*

This walkthrough shows you how to add a new connection to a data source and use it to display some data on a dashboard.

A SQL Server/Azure SQL database is used for example purposes, but you can follow these steps for any data source.

Connecting to Data

If you are accessing data live from a database or online data source, you generally need to have some knowledge about the type of data source as well as the necessary permissions to connect.

You also need to be a user with at least [power user](#) access to create a data connector.

Create a New Data Connector

You can create a data connector a number of different ways:

- Click **Data** in the [main menu](#) on the left, switch to **Data Connector**, then click **Create**.
- You can also use the options provided when creating a [new metric set](#).
- Or, right-click the *Data Connectors* folder in the [Explore window](#) and choose **New Data Connector**.

The new data connector dialog appears, with various settings available that change depending on the type of data provider you want to use.

Help 

New data connector

A data connector lets you connect to your data through a provider.

Name

Select a name...

Data Provider

Microsoft SQL Server Database



Test connection



Data provider information

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials

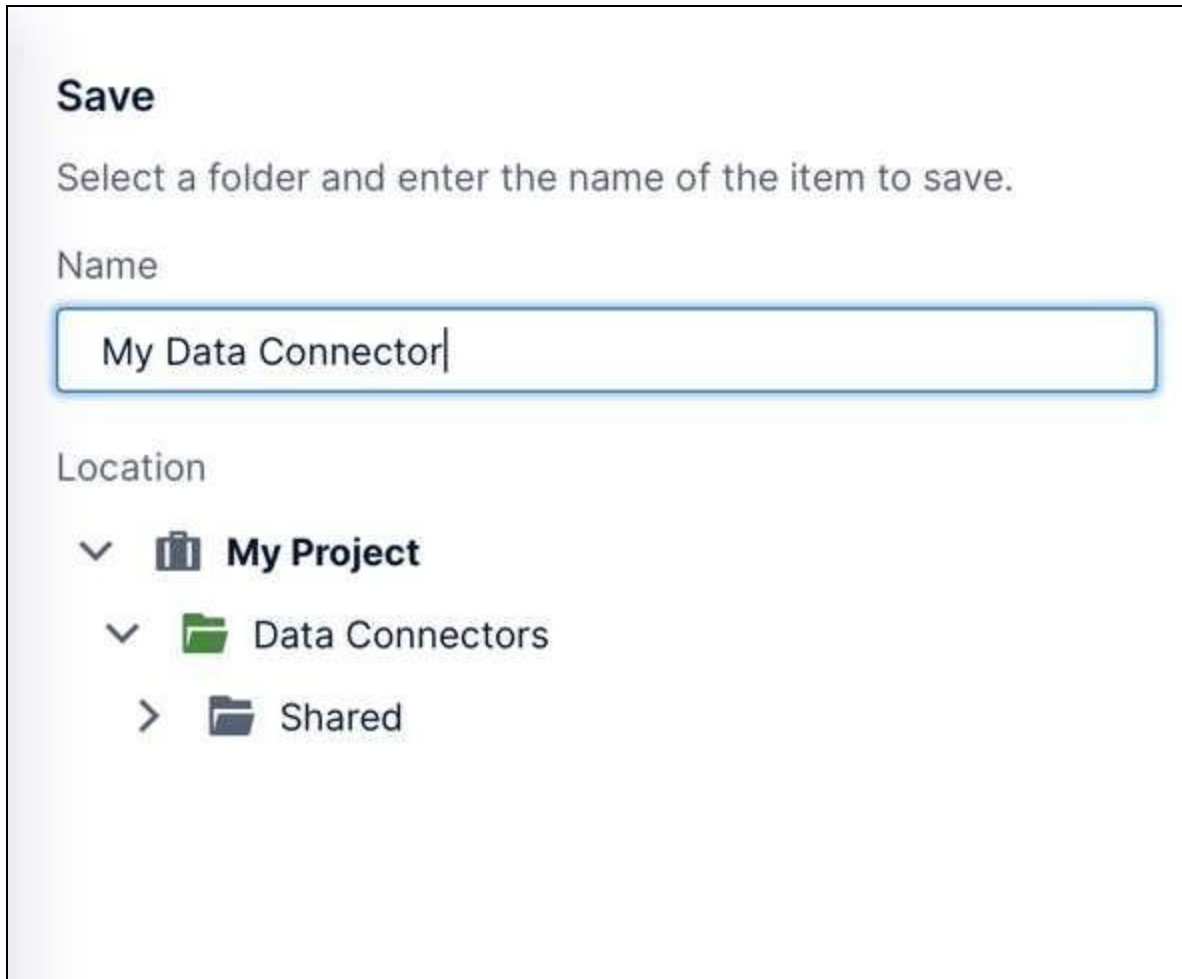


Data Source

Choose a Name and Folder Location

Your new data connector will need a name - click inside the **Name** box to open a dialog where you can enter one.

You can optionally click to select a specific subfolder **Location** under the *Data Connectors* folder. To create a subfolder, right-click (or long-tap) an existing folder and choose **Create Folder**.

A screenshot of a "Save" dialog box. At the top, the word "Save" is in bold. Below it is the instruction "Select a folder and enter the name of the item to save." There are two sections: "Name" and "Location". The "Name" section has a text input field containing "My Data Connector|". The "Location" section shows a tree view of folders: "My Project" (with a dropdown arrow), "Data Connectors" (with a dropdown arrow and a folder icon), and "Shared" (with a right-pointing arrow and a folder icon).

Select a Data Provider

You can connect to a wide range of data source types. The **Data Provider** drop-down is set to *Microsoft SQL Server* by default, which is also used for connecting to Azure SQL and Azure Synapse.

Select a name...

Data Provider

Microsoft SQL Server Database

Amazon Redshift

Azure Table / Azure Cosmos DB

DBF File

Exasol Database

Flat Files

Generic Web

Google Analytics

Google Analytics Data API (GA4)

Google BigQuery

Google Sheets

IBM DB2 Database

JDBC

MemSQL Database

Microsoft Access

Microsoft Dataverse

Microsoft Excel

Microsoft SQL Server Analysis Services

✓ Microsoft SQL Server Database

MySQL Database

QData

Advanced



- Archive of documentation for Logi Symphony v24

The settings below may change after changing the data provider.

Your administrator may need to install drivers on the server for certain data providers.

Settings

You can hover over each data provider setting for a tooltip popup providing a description (or long-tap on touch devices).

Data Provider

Microsoft SQL Server Database



Test connection



Data provider information

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials



Data Source

SERVER1

Initial Catalog

AdventureWorks

Advanced



Connection Resiliency





Some data providers offer more than one [authentication method](#) you can choose from, such as:

- Server Windows credentials
- Provider-specific options such as SQL Server authentication
- Specified Windows credentials
- Impersonated Windows credentials
- Active Directory credentials, for use with Azure

Fill in the requested credentials if required.

When connecting to any database, there may be settings similar to the following ones for Microsoft SQL Server:

- **Data Source** - The name of your database instance or database server (e.g., often this is just the server name), or its network/internet address.
- **Initial Catalog** - The database name.

There are typically other optional or advanced settings you can configure. Click through the expandable sections near the bottom to access additional settings.

 **Note:** Enable **Allow Session Schemas** for supported connectors to use session schemas. See [Session Schema](#).

 **Important:** If you disable [Trusted Access](#) in a [multi-tenancy](#) environment, data retrieved through the Data Discovery connector you created is fetched using the tenant admin's credentials instead of each user's credentials. Effectively, all row level security settings are removed on the data retrieved.

Test the Connection

You can click **Test connection** as a quick way of verifying the settings you just entered. A message will appear in the bottom-right corner of your browser window indicating whether the connection was successful.

Select a name...

Data Provider

Microsoft SQL Server Database

Test connection

Data provider information

Save

At the bottom of the dialog, the **Check In** option is checked by default to [share the data connector with other users](#) with access to the current [project](#) as soon as it's created.

Select structures

Check In
☒

Add a check in comment
+

Close
Save

Finally, click to **Save** at the bottom. A message will tell you the data connector was created and that a discovery operation was started - this process automatically finds and lists all the tables, stored procedures, and other available data 'structures' for you to work with, and it runs in the background so you don't need to wait for it.





Note: Stored Procedures that don't output a value are not supported.

If you want to make changes to the data connector, you can re-open it from the main menu.

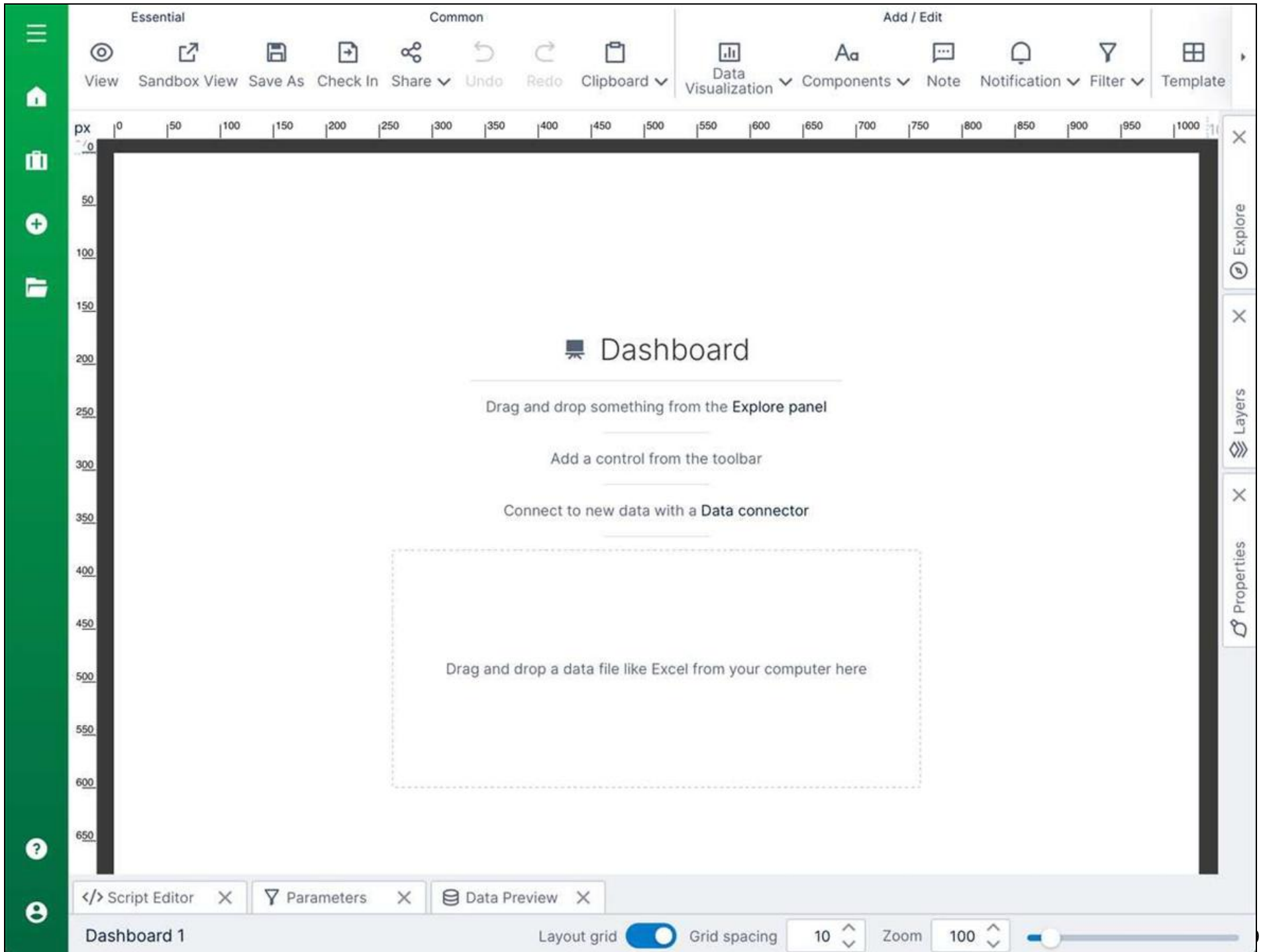
Viewing Data

Now that you have a data connector providing access to a data source, you can display some data using a [metric set](#) or dashboard, for example. The quick walkthrough below shows a dashboard.

Create a New Dashboard

Click on **Views** in the [main menu](#) and create a new dashboard. Choose *Blank* to drag and drop content anywhere on the dashboard, or you can choose another template.

The [dashboard editor](#) is displayed, with most of the screen taken up by a *canvas* where you can drag and drop items to compose your dashboard.



The screenshot displays the Logi Symphony v24 dashboard editor. The interface is divided into several sections:

- Top Toolbar:** Contains two main groups of icons. The 'Essential' group includes View, Sandbox View, Save As, Check In, Share, Undo, Redo, and Clipboard. The 'Common' group includes Data Visualization, Components, Note, Notification, Filter, and Template.
- Left Sidebar:** A green vertical bar with icons for home, a folder, a plus sign, a document, and a question mark.
- Right Sidebar:** A vertical bar with icons for Explore, Layers, and Properties.
- Main Canvas:** A large white area with a black border and a pixel grid (0 to 1000 px). It contains the following text:
 - Dashboard** (with a monitor icon)
 - Drag and drop something from the Explore panel
 - Add a control from the toolbar
 - Connect to new data with a Data connector
 - A dashed rectangular box containing the text: Drag and drop a data file like Excel from your computer here
- Bottom Panel:** Includes a tabbed interface with 'Script Editor', 'Parameters', and 'Data Preview'. Below the tabs, it shows 'Dashboard 1', a 'Layout grid' toggle (which is turned on), 'Grid spacing' set to 10, and a 'Zoom' set to 100 with a slider.



Find Your Data Connector

Click on the *Explore* window, usually docked on the right, to expand it if it isn't already. It lists all the items within the current project.

Expand the *Data Connectors* folder to see your data connector, then further expand the data connector itself to see the data structures discovered, including database tables and programmatic structures such as stored procedures and functions.

×

Explore

×

Layers

×

Properties

↺

↻

📁

⚙️

🔍

Search Files

▼

📁 My Project

▼

📁 Data Connectors

>

📁 Shared

▼

📁 My Data Connector

>

📁 Programmatic Structures

>

📁 Views

>

📄 [dbo].[AWBuildVersion]

>

📄 [dbo].[DatabaseLog]

>

📄 [dbo].[ErrorLog]

>

📄 [HumanResources].[Department]

>

📄 [HumanResources].[Employee]

>

📄 [HumanResources].[EmployeeDep

>

📄 [HumanResources].[EmployeePayl

>

📄 [HumanResources].[JobCandidate

>

📄 [HumanResources].[Shift]

>

📄 [Person].[Address]

>

📄 [Person].[AddressType]

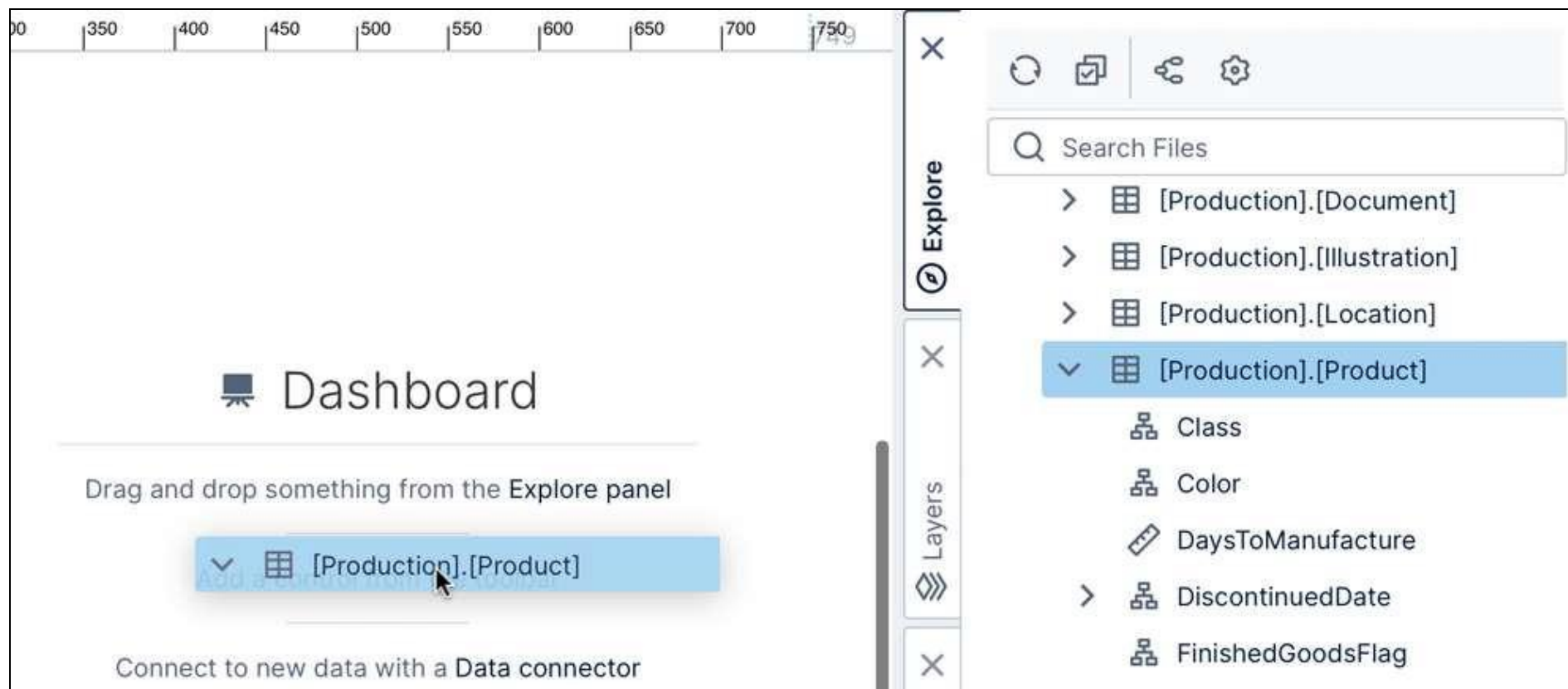
Page 31 of 279



Note: If the structures or their columns have changed since they were last discovered, you can right-click/long-tap the data connector or one of its sub-folders and choose Re-Discover.

Drag a Table of Data To the Canvas

Under your data connector, scroll down and locate a specific table or sheet of data you want to see. Expand the table and [drag individual columns](#) you are interested in, or drag the entire table to preview all of its [raw data](#).



Data sources are connected to live/real-time by default (other than files such as Excel spreadsheets that were uploaded).

Dragging data automatically creates a [metric set](#) you can use to analyze it. Initially it's visualized as a table, but you can Re-Visualize from the toolbar. Otherwise, [a recommended visualization will be chosen for you automatically](#) as you drag or add more data.



Click **View** in the toolbar to switch to *View mode*. This lets you interact with your dashboard, such as using the scrollbars on the table visualization. Click **Edit** in the toolbar to go back to **Edit mode**.

Page 33 of 279



- Archive of documentation for Logi Symphony v24

For more information, see:

- [Authentication Methods](#)
- [Connect to OLAP Data and Apply a Formula](#)
- [Setting Up Data Input](#)
- [Other Metric Set Tools](#)
- [Automatic Joins and Hierarchies](#)
- [Working With Projects](#)
- [Check In, Check Out and Auto Saving](#)

Selecting Structures For Data Connector Discovery

This applies to: *Managed Dashboards, Managed Reports*

When setting up a data connector for most data providers such as for a database, you have the option of selecting which native structures (e.g., tables or cubes) will be discovered and appear in the Explore window.

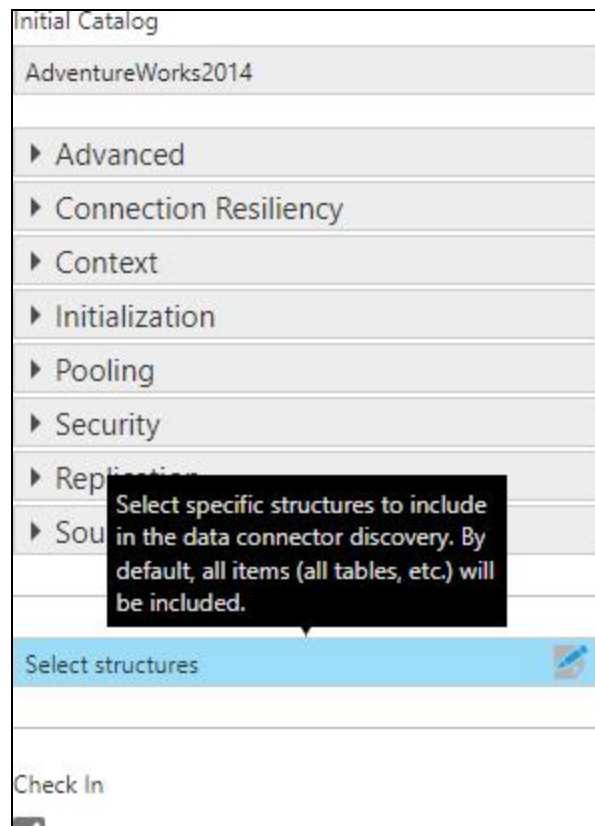
For example, the database you want to connect to may have hundreds of tables but for your current project you only need a few of those tables.



Note: Tabular data providers such as Excel do not provide this option.

Select Structures

When creating a new data connector, or after opening an existing one from the main menu, scroll down and click **Select structures**.



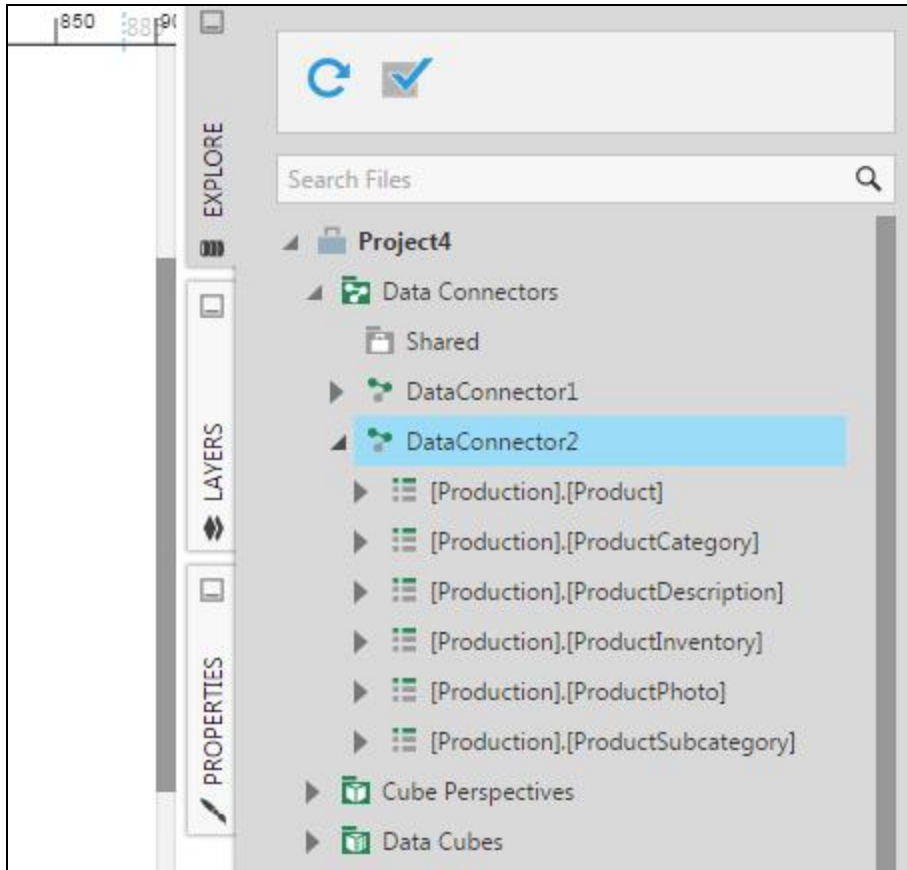


- Archive of documentation for Logi Symphony v24

In the *Select Data Structures* dialog, select which native structures you want to be discovered and included under the data connector in the Explore window.

- ☐ [Person].[PhoneNumberType]
- ☐ [Person].[StateProvince]
- ☐ [Person].[VAdditionalContactInfo]
- ☐ [Person].[VStateProvinceCountryRegion]
- ☐ [Production].[BillOfMaterials]
- ☐ [Production].[Culture]
- ☐ [Production].[Document]
- ☐ [Production].[Illustration]
- ☐ [Production].[Location]
- ☒ [Production].[Product]
- ☒ [Production].[ProductCategory]
- ☐ [Production].[ProductCostHistory]
- ☒ [Production].[ProductDescription]
- ☐ [Production].[ProductDocument]
- ☒ [Production].[ProductInventory]
- ☐ [Production].[ProductListPriceHistory]
- ☐ [Production].[ProductModel]
- ☐ [Production].[ProductModelIllustration]
- ☐ [Production].[ProductModelProductDescriptionCulture]
- ☒ [Production].[ProductPhoto]
- ☐ [Production].[ProductProductPhoto]
- ☐ [Production].[ProductReview]
- ☒ [Production].[ProductSubcategory]
- ☐ [Production].[ScrapReason]
- ☐ [Production].[TransactionHistory]
- ☐ [Production].[TransactionHistoryArchive]
- ☐ [Production].[UnitMeasure]
- ☐ [Production].[VProductAndDescription]

Submit the data connector to begin discovery. After this completes, create a new dashboard and go to the Explore window to see your data connector which should list only the structures you selected.



Note: Structures used by downstream elements such as data cubes will still be discovered even if not selected. You can check for these by right-clicking the structure in a file explorer to open its **Properties** then clicking **References**.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [File and Folder Properties](#)



- Archive of documentation for Logi Symphony v24

- [Check In, Check Out and Auto Saving](#)
- [Working With Projects](#)



Connect to Data and View it on a Dashboard

This applies to: *Managed Dashboards, Managed Reports*

This walkthrough shows you how to add a new connection to a data source and use it to display some data on a dashboard.

A SQL Server/Azure SQL database is used for example purposes, but you can follow these steps for any data source.

Connecting to Data

If you are accessing data live from a database or online data source, you generally need to have some knowledge about the type of data source as well as the necessary permissions to connect.

You also need to be a user with at least [power user](#) access to create a data connector.

Create a New Data Connector

You can create a data connector a number of different ways:

- Click **Data** in the [main menu](#) on the left, switch to **Data Connector**, then click **Create**.
- You can also use the options provided when creating a [new metric set](#).
- Or, right-click the *Data Connectors* folder in the [Explore window](#) and choose **New Data Connector**.

The new data connector dialog appears, with various settings available that change depending on the type of data provider you want to use.

Help 

New data connector

A data connector lets you connect to your data through a provider.

Name

Select a name...

Data Provider

Microsoft SQL Server Database



Test connection



Data provider information

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials



Data Source

Choose a Name and Folder Location

Your new data connector will need a name - click inside the **Name** box to open a dialog where you can enter one.

You can optionally click to select a specific subfolder **Location** under the *Data Connectors* folder. To create a subfolder, right-click (or long-tap) an existing folder and choose **Create Folder**.

Save

Select a folder and enter the name of the item to save.

Name

Location

- ▼  **My Project**
 - ▼  Data Connectors
 - >  Shared

Select a Data Provider

You can connect to a wide range of data source types. The **Data Provider** drop-down is set to *Microsoft SQL Server* by default, which is also used for connecting to Azure SQL and Azure Synapse.

Select a name...

Data Provider

Microsoft SQL Server Database ▼

✓ Microsoft SQL Server Database

MySQL Database

QData

Advanced ▼



- Archive of documentation for Logi Symphony v24

The settings below may change after changing the data provider.

Your administrator may need to install drivers on the server for certain data providers.

Settings

You can hover over each data provider setting for a tooltip popup providing a description (or long-tap on touch devices).

Data Provider

Microsoft SQL Server Database



Test connection



Data provider information

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials



Data Source

SERVER1

Initial Catalog

AdventureWorks

Advanced



Connection Resiliency





Some data providers offer more than one [authentication method](#) you can choose from, such as:

- Server Windows credentials
- Provider-specific options such as SQL Server authentication
- Specified Windows credentials
- Impersonated Windows credentials
- Active Directory credentials, for use with Azure

Fill in the requested credentials if required.

When connecting to any database, there may be settings similar to the following ones for Microsoft SQL Server:

- **Data Source** - The name of your database instance or database server (e.g., often this is just the server name), or its network/internet address.
- **Initial Catalog** - The database name.

There are typically other optional or advanced settings you can configure. Click through the expandable sections near the bottom to access additional settings.

 **Note:** Enable **Allow Session Schemas** for supported connectors to use session schemas. See [Session Schema](#).

 **Important:** If you disable [Trusted Access](#) in a [multi-tenancy](#) environment, data retrieved through the Data Discovery connector you created is fetched using the tenant admin's credentials instead of each user's credentials. Effectively, all row level security settings are removed on the data retrieved.

Test the Connection

You can click **Test connection** as a quick way of verifying the settings you just entered. A message will appear in the bottom-right corner of your browser window indicating whether the connection was successful.

Select a name...

Data Provider

Microsoft SQL Server Database

Test connection

Data provider information

Save

At the bottom of the dialog, the **Check In** option is checked by default to [share the data connector with other users](#) with access to the current [project](#) as soon as it's created.

Select structures

Check In

☒

Add a check in comment

+

Close

Save

Finally, click to **Save** at the bottom. A message will tell you the data connector was created and that a discovery operation was started - this process automatically finds and lists all the tables, stored procedures, and other available data 'structures' for you to work with, and it runs in the background so you don't need to wait for it.





Note: Stored Procedures that don't output a value are not supported.

If you want to make changes to the data connector, you can re-open it from the main menu.

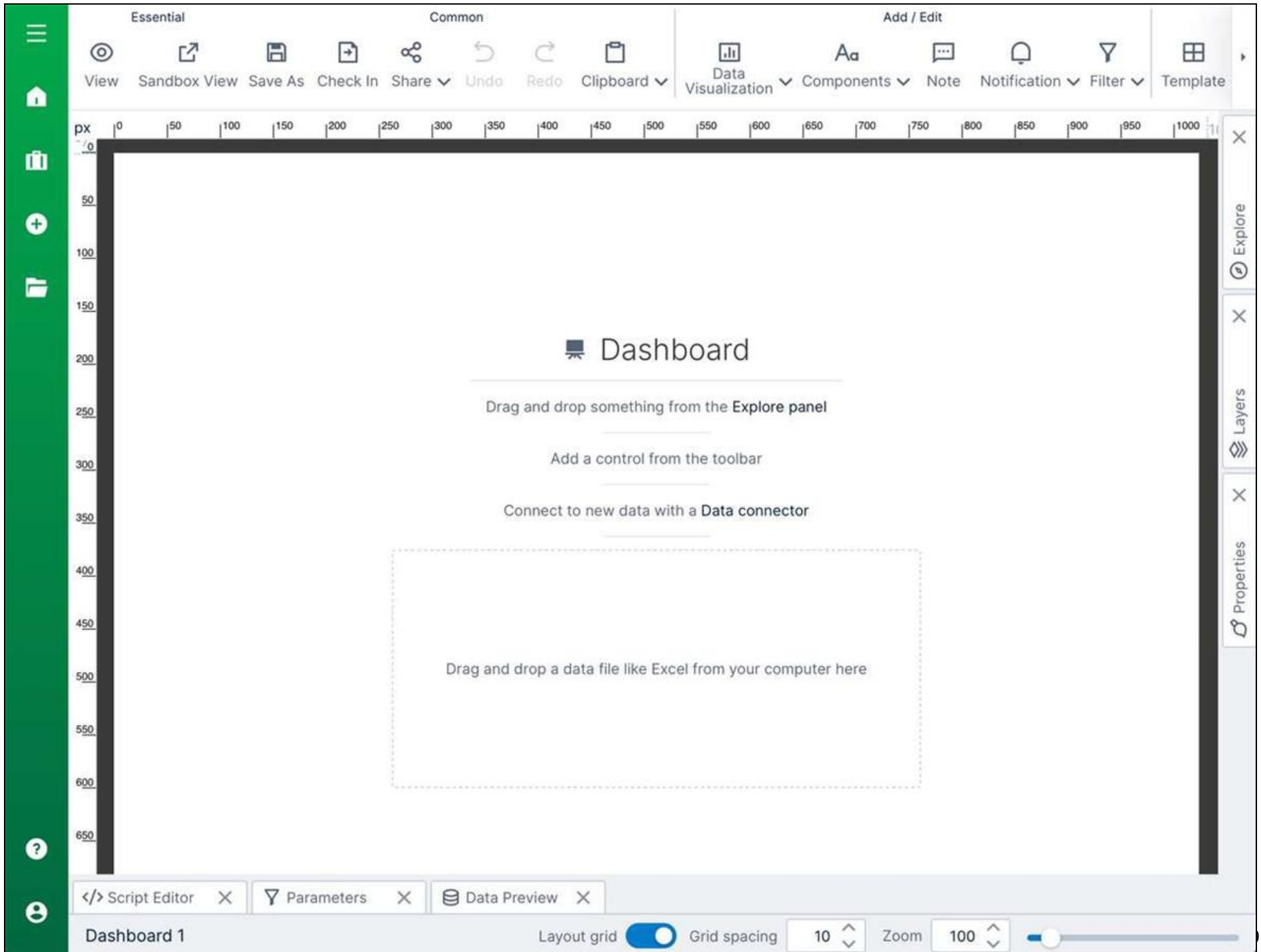
Viewing Data

Now that you have a data connector providing access to a data source, you can display some data using a [metric set](#) or dashboard, for example. The quick walkthrough below shows a dashboard.

Create a New Dashboard

Click on **Views** in the [main menu](#) and create a new dashboard. Choose *Blank* to drag and drop content anywhere on the dashboard, or you can choose another template.

The [dashboard editor](#) is displayed, with most of the screen taken up by a *canvas* where you can drag and drop items to compose your dashboard.



The screenshot displays the Logi Symphony v24 dashboard editor interface. The top toolbar is organized into three sections: 'Essential' (View, Sandbox View, Save As, Check In, Share, Undo, Redo, Clipboard), 'Common' (Data Visualization, Components, Note, Notification, Filter, Template), and 'Add / Edit'. A vertical green sidebar on the left contains icons for home, file management, and help. The main workspace is a large white area with a dashed border, containing the title 'Dashboard' and three instructions: 'Drag and drop something from the Explore panel', 'Add a control from the toolbar', and 'Connect to new data with a Data connector'. Below these instructions is a large dashed box with the text 'Drag and drop a data file like Excel from your computer here'. The right sidebar contains icons for 'Explore', 'Layers', and 'Properties'. The bottom status bar shows 'Dashboard 1', a 'Layout grid' toggle, 'Grid spacing' set to 10, and 'Zoom' set to 100.

Essential View Sandbox View Save As Check In Share Undo Redo Clipboard

Common Data Visualization Components Note Notification Filter Template

Add / Edit

px 0 50 100 150 200 250 300 350 400 450 500 550 600 650 1000

Dashboard

Drag and drop something from the Explore panel

Add a control from the toolbar

Connect to new data with a Data connector

Drag and drop a data file like Excel from your computer here

Script Editor Parameters Data Preview

Dashboard 1 Layout grid Grid spacing 10 Zoom 100



- Archive of documentation for Logi Symphony v24

Find Your Data Connector

Click on the *Explore* window, usually docked on the right, to expand it if it isn't already. It lists all the items within the current project.

Expand the *Data Connectors* folder to see your data connector, then further expand the data connector itself to see the data structures discovered, including database tables and programmatic structures such as stored procedures and functions.

×

Explore

×

Layers

×

Properties

↺

↻

📁

⚙️

🔍

Search Files

▼

📁 My Project

▼

📁 Data Connectors

>

📁 Shared

▼

📁 My Data Connector

>

📁 Programmatic Structures

>

📁 Views

>

📄 [dbo].[AWBuildVersion]

>

📄 [dbo].[DatabaseLog]

>

📄 [dbo].[ErrorLog]

>

📄 [HumanResources].[Department]

>

📄 [HumanResources].[Employee]

>

📄 [HumanResources].[EmployeeDep

>

📄 [HumanResources].[EmployeePayl

>

📄 [HumanResources].[JobCandidate

>

📄 [HumanResources].[Shift]

>

📄 [Person].[Address]

>

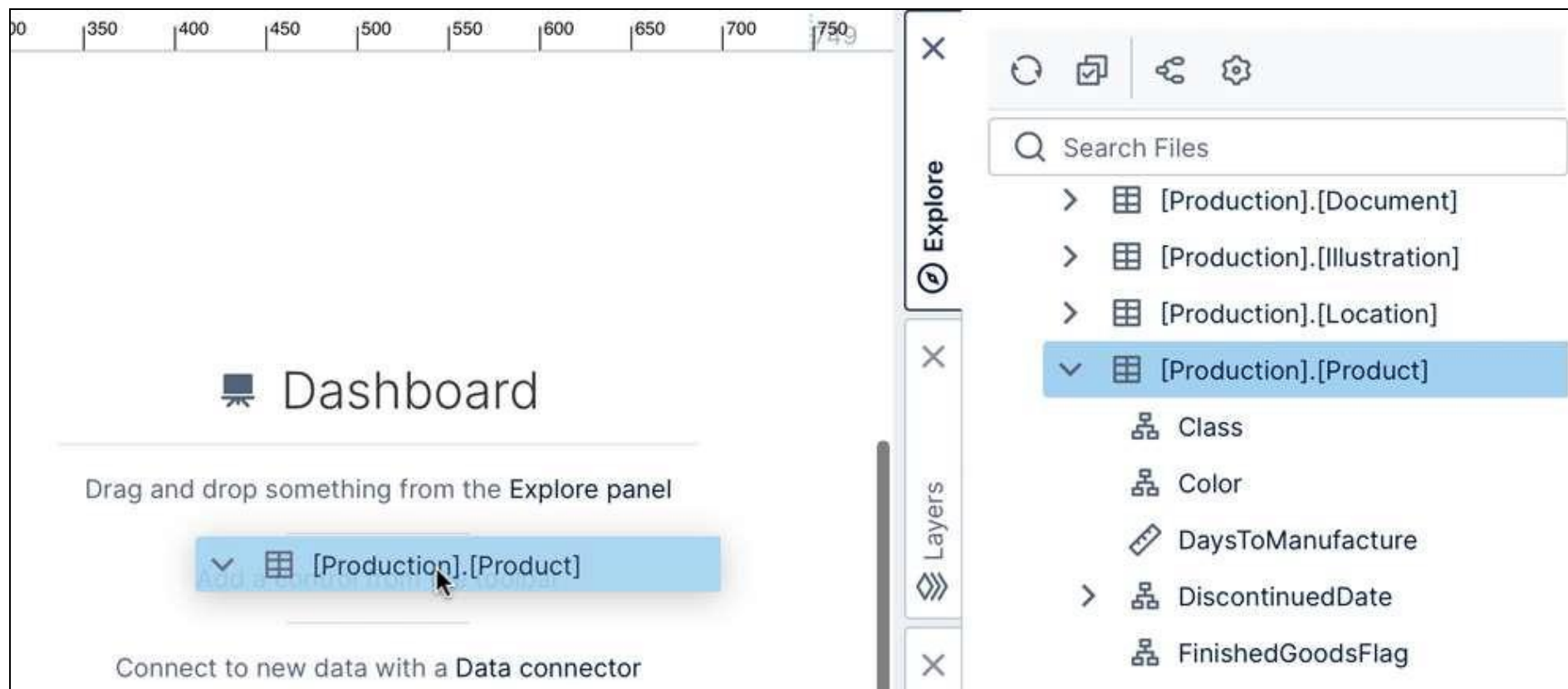
📄 [Person].[AddressType]



Note: If the structures or their columns have changed since they were last discovered, you can right-click/long-tap the data connector or one of its sub-folders and choose Re-Discover.

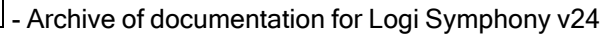
Drag a Table of Data To the Canvas

Under your data connector, scroll down and locate a specific table or sheet of data you want to see. Expand the table and [drag individual columns](#) you are interested in, or drag the entire table to preview all of its [raw data](#).



Data sources are connected to live/real-time by default (other than files such as Excel spreadsheets that were uploaded).

Dragging data automatically creates a [metric set](#) you can use to analyze it. Initially it's visualized as a table, but you can Re-Visualize from the toolbar. Otherwise, [a recommended visualization will be chosen for you automatically](#) as you drag or add more data.



Click **View** in the toolbar to switch to *View mode*. This lets you interact with your dashboard, such as using the scrollbars on the table visualization. Click **Edit** in the toolbar to go back to **Edit mode**.

Page 54 of 279



- Archive of documentation for Logi Symphony v24

For more information, see:

- [Authentication Methods](#)
- [Connect to OLAP Data and Apply a Formula](#)
- [Setting Up Data Input](#)
- [Other Metric Set Tools](#)
- [Automatic Joins and Hierarchies](#)
- [Working With Projects](#)
- [Check In, Check Out and Auto Saving](#)

Drag and Drop an Excel File

This applies to: *Managed Dashboards, Managed Reports*

This article shows you how to display data from a Microsoft Excel file using simple drag-and-drop operations. This also works for other file data sources such as [Access](#), [flat files](#) such as CSV, or [XML files](#).

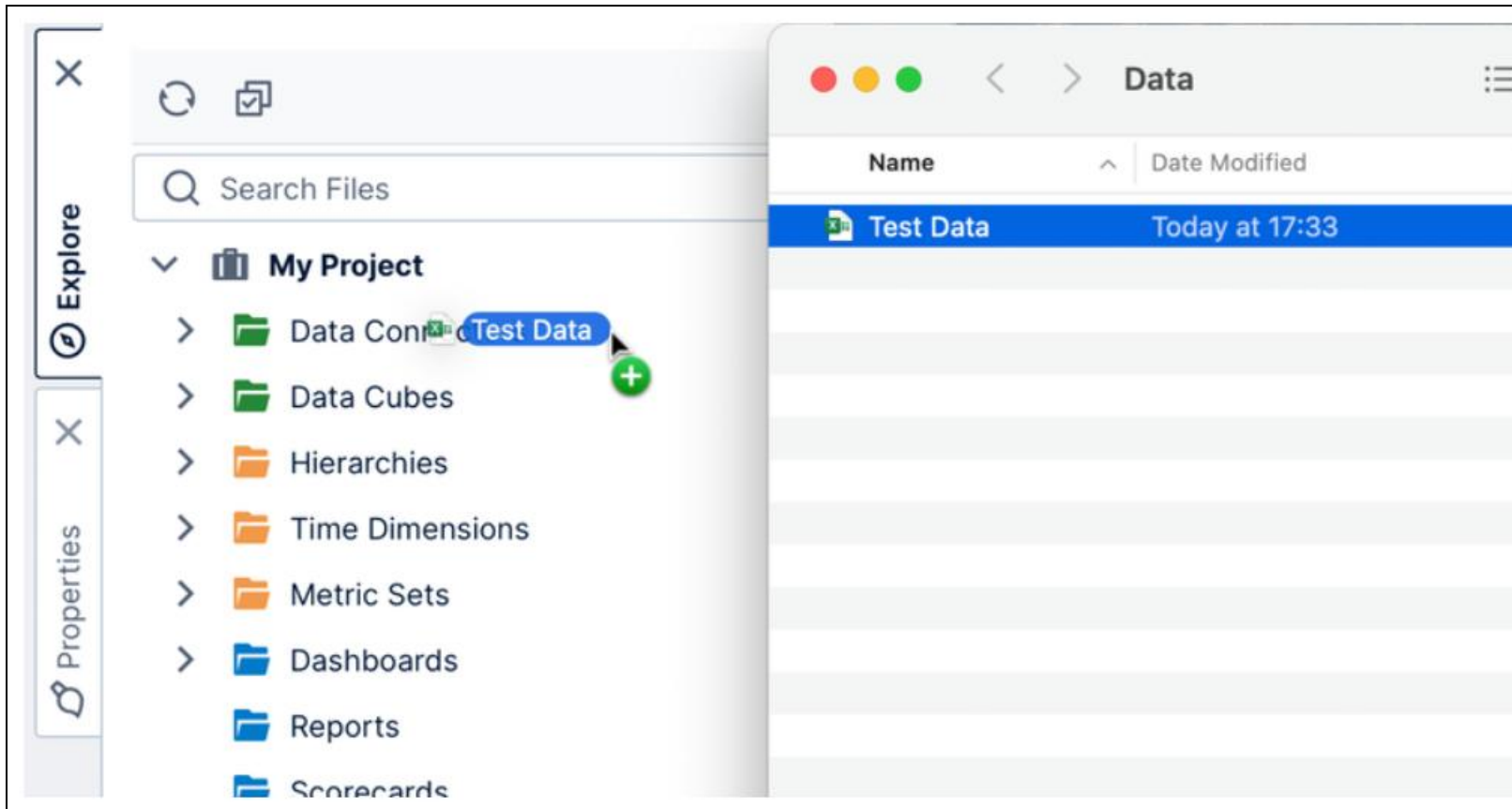


Note: You can also [connect to an Excel file](#) located at a URL/address or in a shared folder if you want to display future updates to the file.

Drag an Excel File To the Explore Window

This example depicts these steps followed after creating a new metric set from the [main menu](#), but you can follow the same steps when editing a dashboard.

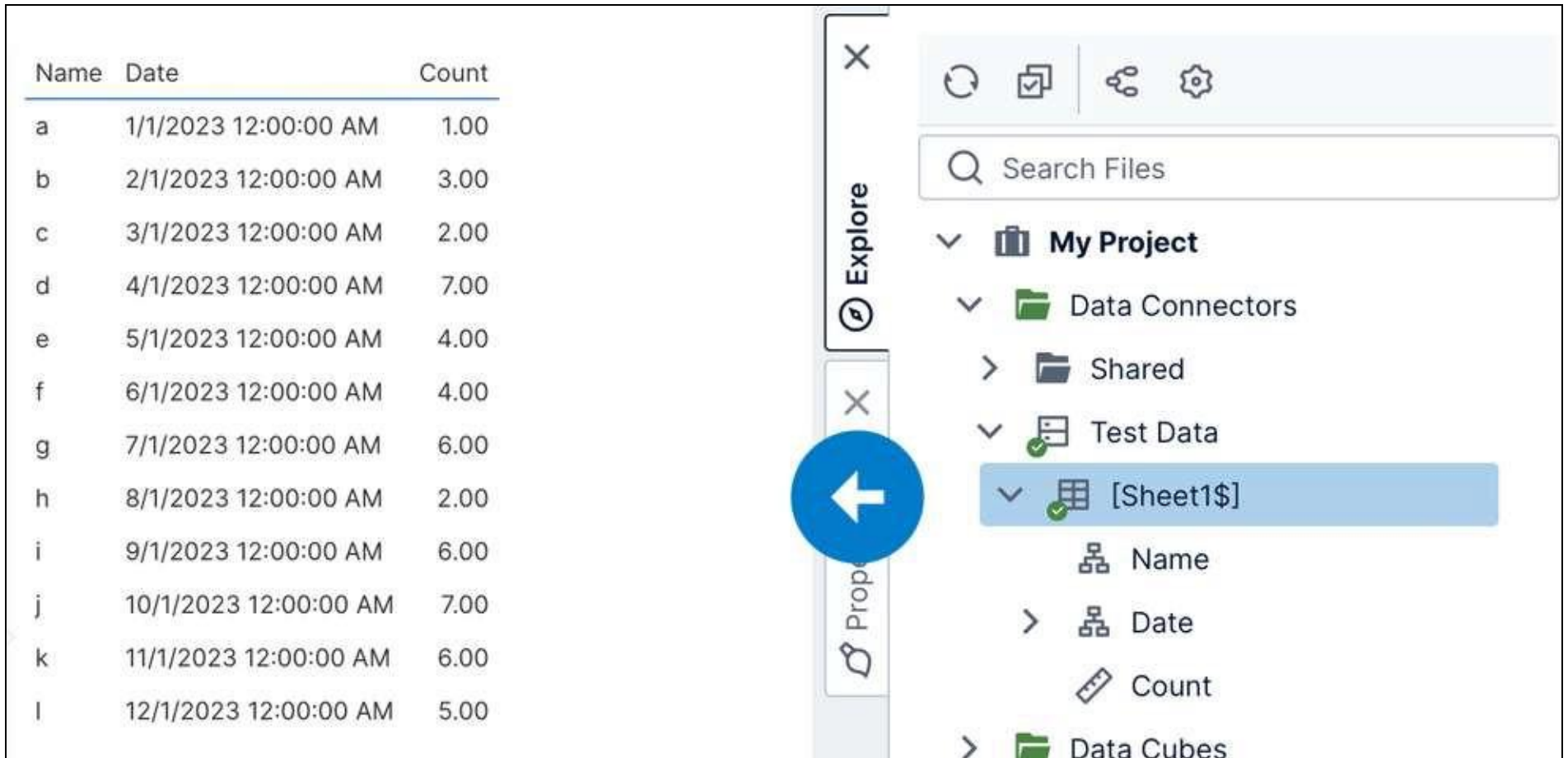
Locate your Excel file on your device (e.g., Windows Explorer or Finder), then drag and drop it into the **Explore** [window](#).



Note: To browse through files on your device to find the one to upload instead of dragging and dropping, [create an Excel data connector](#) and click to Browse/Choose File.

The Excel file is automatically imported as a *data connector*.

Expand the **Data Connectors** folder in the Explore window to see the auto-generated data connector for the Excel file. You can further expand the data connector to see any sheets and tables found in the file, and the column structure of each sheet.



Name	Date	Count
a	1/1/2023 12:00:00 AM	1.00
b	2/1/2023 12:00:00 AM	3.00
c	3/1/2023 12:00:00 AM	2.00
d	4/1/2023 12:00:00 AM	7.00
e	5/1/2023 12:00:00 AM	4.00
f	6/1/2023 12:00:00 AM	4.00
g	7/1/2023 12:00:00 AM	6.00
h	8/1/2023 12:00:00 AM	2.00
i	9/1/2023 12:00:00 AM	6.00
j	10/1/2023 12:00:00 AM	7.00
k	11/1/2023 12:00:00 AM	6.00
l	12/1/2023 12:00:00 AM	5.00

The 'Explore' sidebar on the right shows a tree view of data sources. A blue circle with a white arrow points to the '[Sheet1\$]' connector, which has a green checkmark icon next to it. Below the connector, the columns 'Name', 'Date', and 'Count' are listed.



Note: A green check mark icon on the data connector indicates it's currently checked out to you and not yet [checked in](#) to be shared with others. You can check it in from its right-click menu or [from its dialog](#) after opening it for editing from its right-click menu or from the main menu.

For this example, drag an Excel sheet from the Explore window to the canvas to view its entire contents. A table visualization appears which displays the contents of the Excel sheet.

Alternatively, you can also drag individual columns one at a time that you want displayed.

Drag an Excel File Directly To the Canvas

Optionally, you can drag an Excel file from your computer and drop it directly onto a new metric set or onto the canvas of the dashboard when editing.



- Archive of documentation for Logi Symphony v24

The Excel file will be added as a data connector in the Explore window the same way as shown above, and a table visualization will automatically appear on the canvas displaying data from one of the file's sheets.

Remove a Column From the Table

The **Data Analysis Panel** normally appears automatically to the left (if not already open when editing a dashboard, select Data Analysis Panel in the toolbar or from the right-click menu).

For this example, we are not using the *Name* column. Click the icon to remove it from the metric set so it is no longer displayed.

Data Analysis Panel: Metric Set

 Freeze
  Refresh Data
  Visualization

Metric Set 1

 Measures

Count
  SUM
 


[click to add](#), or drop a measure

 Rows

Name
 



Date
 



<Row Number>
 

[click to add](#), or drop a hierarchy

Name	Date	Count
a	1/1/2023 12:00:00 AM	1.00
b	2/1/2023 12:00:00 AM	3.00
c	3/1/2023 12:00:00 AM	2.00
d	4/1/2023 12:00:00 AM	7.00
e	5/1/2023 12:00:00 AM	4.00
f	6/1/2023 12:00:00 AM	4.00
g	7/1/2023 12:00:00 AM	6.00
h	8/1/2023 12:00:00 AM	2.00
i	9/1/2023 12:00:00 AM	6.00
j	10/1/2023 12:00:00 AM	7.00
k	11/1/2023 12:00:00 AM	6.00
l	12/1/2023 12:00:00 AM	5.00

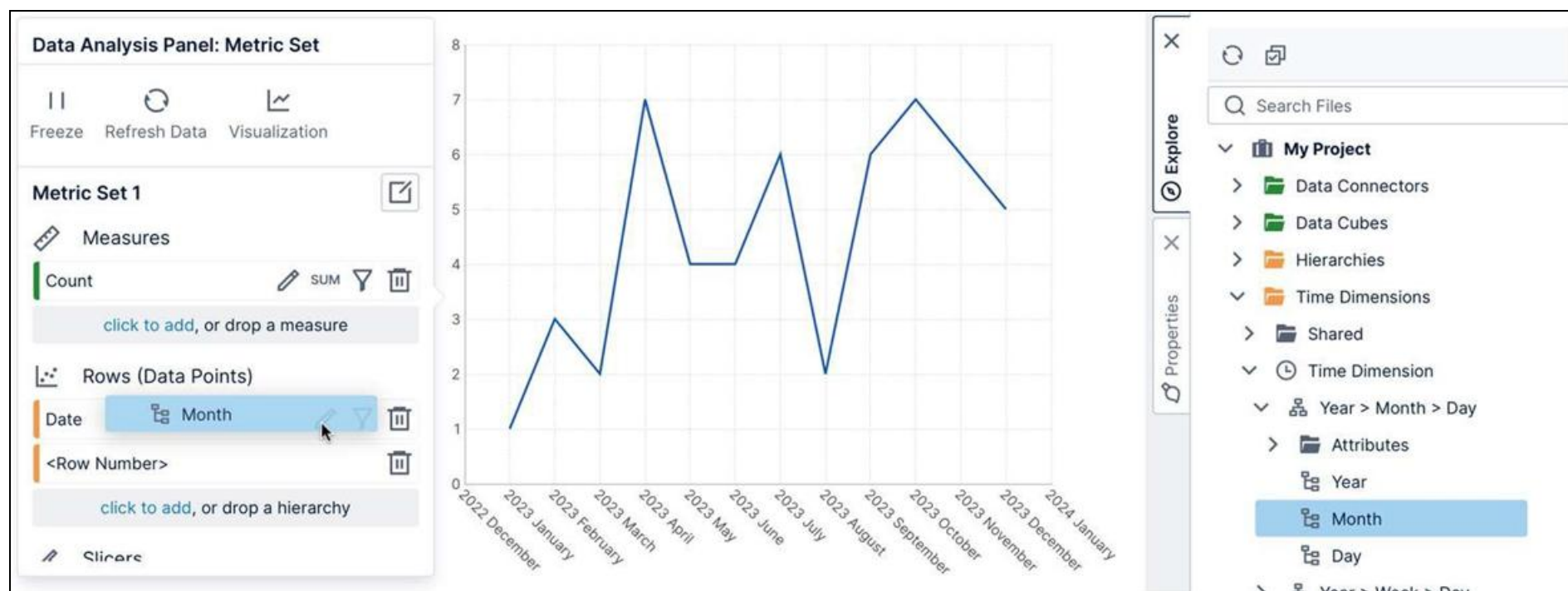
A different visualization may be chosen automatically for you (e.g., a line chart) based on the remaining data using its [recommendation engine](#) if you didn't choose a specific visualization yourself. You can always choose your own preferred visualization as shown later.

Replace Date Column With Time Hierarchy Level

Expand the *Time Dimensions* folder in the Explore window. (When following these steps differently, click the suitcase icon in the toolbar of the Explore window first if it's showing a simplified view of items without a *Time Dimensions* folder.)

Expand the default time dimension and also its hierarchy that contains *Month*.

Drag the *Month* level of the hierarchy and drop it onto your existing date column in the Data Analysis Panel.



The visualization is updated to group the dates into months and display the month names.



Re-Visualize

Finally, click **Re-Visualize** from the toolbar, and then choose a different visualization if you prefer. In our example, the we can switch back to a **Table** from the line chart.

Month	Count
▶ January, 2023	1.00
▶ February, 2023	3.00
▶ March, 2023	2.00
▶ April, 2023	7.00
▶ May, 2023	4.00
▶ June, 2023	4.00
▶ July, 2023	6.00
▶ August, 2023	2.00
▶ September, 2023	6.00
▶ October, 2023	7.00
▶ November, 2023	6.00
▶ December, 2023	5.00



Dragging and dropping a file to the application will upload the file.

- For updates to the file to take effect, you must either edit the data connector and upload a new file, or specify a URL or path to access the file in the data connector settings. See [Connecting to Excel](#) for more information.
- An uploaded file will be automatically warehoused after the first use to improve performance.
- You can download an uploaded file. Right-click the checked-in data connector from the Explore window or main menu and select **Download File**.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [Setting Up Data Input](#)
- [View Data With a Chart and Drill Down](#)
- [Connecting to Excel](#)
- [Connecting to Access](#)
- [Connecting to Flat Files in Managed Dashboards](#)
- [Connecting to XML Files](#)



Authentication Methods

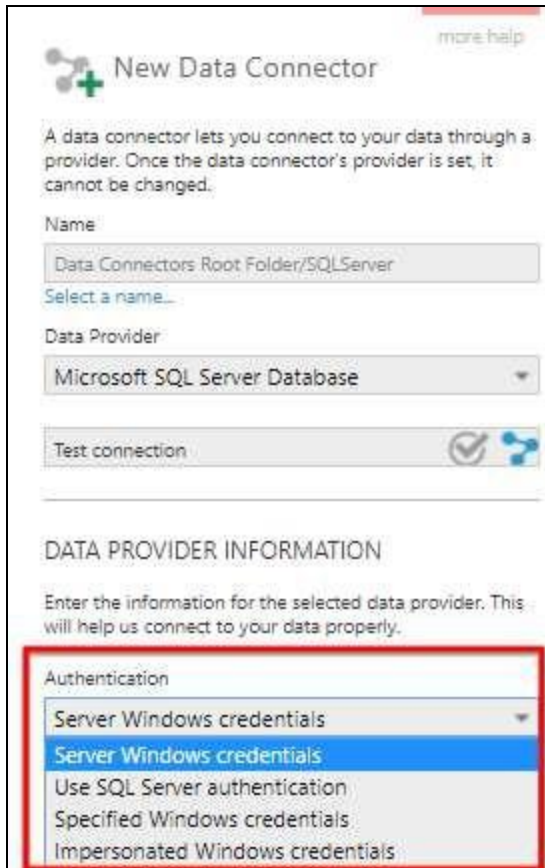
This applies to: *Managed Dashboards, Managed Reports*

This article explains the available authentication methods you can use to connect to a data source.

Authentication Methods

Some data providers have an **Authentication** field, which you can set to a method such as *Specified Windows* credentials. For example:

- Access and DBF
- Excel/ Flat/ XML files
- ODBC generic
- SharePoint Lists / Excel Services
- SQL Server
- SQL Server Analysis Services
- Teradata



New Data Connector [more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name
Data Connectors Root Folder/SQLServer
[Select a name...](#)

Data Provider
Microsoft SQL Server Database

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

- Server Windows credentials
- Server Windows credentials
- Use SQL Server authentication
- Specified Windows credentials
- Impersonated Windows credentials

The available methods are explained below but note that some of the methods are applicable to certain providers only.

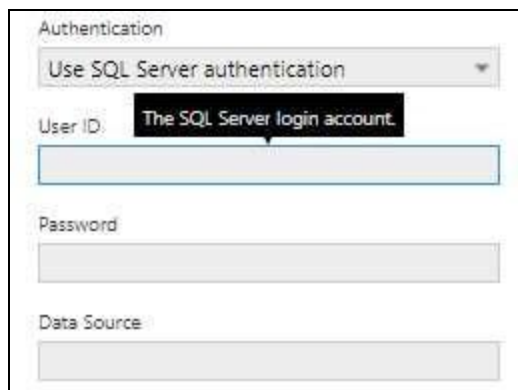
Server Windows Credentials

The *Server Windows credentials* authentication method lets you connect to a data source using the Windows identity that is running the Symphony IIS application pool.

Use this method when the IIS application pool user/identity already has access to the data source (for example, when the data source does not contain any sensitive information).

SQL Server Authentication

This authentication method is applicable to the SQL Server data provider only. It lets you connect to a SQL Server data source using login credentials that are created and managed by SQL Server. These login credentials are not based on Windows user accounts.



See also: <https://docs.microsoft.com/en-us/sql/relational-databases/security/choose-an-authentication-mode>

Specified Windows Credentials

The *Specified Windows credentials* authentication method lets you enter the credentials that will be used to establish the Windows identity for connecting to the data source.

Use this method when the IIS application pool identity does not have sufficient access to the data source. Generally, all users viewing dashboards based on this data connector will see the same data (because the same specified credentials are being used).

The method requires the following information:

- **Domain** - The domain to which the Windows account belongs.
- **Username** - The Windows account name.
- **Password** - The account's password.
- **Relay Credentials** - For connections to remote servers. If enabled, the specified credentials will be sent to the remote server and authenticated there. If unchecked, the specified credentials will be authenticated by the server where the Symphony application is running. Use this option if the Symphony server is not able to reach a domain controller for the specified domain. Do not enable this option if the data source is on the same server as the Symphony application.

Authentication

Specified Windows credentials

Domain
Username
Password
Relay Credentials

☐

Impersonated Windows Credentials

If you are logged on to Symphony with a Windows account, the *Impersonated Windows credentials* method will use the corresponding identity to connect to the data source.

Use this method when the data source returns different data depending on the Windows account that is connected.



Note: Impersonated Windows credentials allow for a Double-Hop issue. To avoid this, make sure the data source and the application database are on the same computer, or enable Kerberos delegation. You can read more on this from Microsoft [here](#) or [here](#).

Azure Active Directory

When creating a Microsoft SQL Server data connector, additional authentication methods *Active Directory Password* and *Active Directory Integrated* are available for when [connecting to Azure SQL using Azure Active Directory](#).

Online Credentials

This authentication method is applicable when you are connecting to [SharePoint Lists and Excel Services](#) using **SharePoint Online** (e.g., Office 365) instead of an on-premises server.

For more information, see:



- Archive of documentation for Logi Symphony v24

- [Connect to Data and View it on a Dashboard](#)
- [Connecting to SSAS](#)
- [SSAS Data Connection Issues](#)
- [SQL Server data connection issues](#)
- [Using Custom Attributes to Filter Data by User](#)

Data Connector Reference

Symphony data connectors are used to connect to your data stores. Each data connector has capabilities and limitations when connected to the Symphony server. This topic highlights those details and provides a link to more information about each connector. For information about setting the parameters required by a connector to connect to a data store, see [Manage Data Discovery Data Store Connections](#). For information on how to download and install a connector that is not provided in the default Symphony installation, see [Obtain Additional Connector Servers](#).

The connectors below are organized for use in Data Discovery dashboards, Managed Dashboards, and Managed Reports.

- Some connectors can only be used in managed dashboards, reports, visualizations, and more.
- All connectors that work in data discovery dashboards and visuals can also be used in managed dashboards, reports, visualizations and more using the ODBC connector to data discovery.



Important: You can use a Managed Dashboard connection as a data source or in a fusion data source in Visual Data Discovery. See [Add and validate a connection to a data cube](#).

Managed Dashboards and Reports Data Connectors

Create and manage these data connectors when working in the Managed Dashboards or Managed Reports modules. Some [additional connectors](#) are available from Visual Data Discovery, but management of these connectors is in the Visual Data Discovery module. You can also use data sources that utilize many of these connectors in Visual Data Discovery.

See [Connect to Data and View it on a Dashboard](#).

Connector	Other Support Notes
Access	ODBC/JDBC only
Amazon Redshift	Drivers included
Azure Table / Azure Cosmos DB	Drivers included
dBase (DBF) database files	Drivers included
BigQuery	Drivers included
Exasol	Drivers included



Connector	Other Support Notes
Excel	Drivers included
Flat files	Drivers included
Generic Web Data Sources	Drivers included
Google Analytics	Drivers included
Google Sheets	Drivers included
IBM DB2	Drivers included
JDBC	64-bit JDBC driver for the specific data source
MemSQL	Drivers included
Microsoft Dataverse	Drivers included
Microsoft SQL Server 2005 or higher Including SQL Server Express, Azure SQL, Azure Synapse	Drivers included
MySQL	Drivers included
OData	Drivers included
ODBC	64-bit ODBC driver for the specific data source
Oracle	Drivers included
Oracle 11g Essbase	Drivers included
Pardot	Drivers included
PostgreSQL	Drivers included
Salesforce	Drivers included
SAP Hana	Drivers included
SAP NetWeaver BW 7.0 or later	Drivers included; uses XMLA web service .
SharePoint Lists and Excel Services	Drivers included (online credentials only)

Connector	Other Support Notes
Snowflake	Drivers included
SSAS (Microsoft SQL Server Analysis Services)	Drivers included
Teradata	Install the driver ; version 12.0 or later
Vertica	ODBC/JDBC only
XML File	Drivers included

Visual Data Discovery Data Connectors

Create and manage these data connectors when working in the Visual Data Discovery module. You can also use data sources that utilize these connectors in Managed Dashboards and Reports in Symphony.



Important: You can use a Managed Dashboard connection as a data source or in a fusion data source in Visual Data Discovery. See [Add and validate a connection to a data cube](#).

Connector	Data Discovery Microservice	Supported Versions	Data Discovery Connector Port	Other Actions Required & Notes
Amazon Redshift	zoomdata-edc-redshift	1.0	8202	Install JDBC driver.
Amazon S3	zoomdata-edc-s3		8129	Separate download.
Apache Drill	zoomdata-edc-drill	1.14 - 1.16	8095	Separate download.
Apache Phoenix	zoomdata-edc-phoenix-4.7	4.7	8124	Apache Phoenix 4.4 and 4.5 require separate downloads.
Apache Phoenix Query Server (QS)	zoomdata-edc-phoenix-4.7-queryserver	4.7	8125	
Apache Solr	zoomdata-edc-apache-solr	7.4 - 8.4	8115	
BigQuery	zoomdata-edc-bigquery		8093	
Business Central	zoomdata-edc-businesscentral-jet	N/A	8156	Separate download.
Cloudera	zoomdata-edc-impala	3.2 - 3.4	8098	



Connector	Data Discovery Microservice	Supported Versions	Data Discovery Connector Port	Other Actions Required & Notes
Impala				
Cloudera Search	zoomdata-edc-cloudera-search	4.10 - 7.4	8201	
Couchbase	zoomdata-edc-couchbase	6.0.1	8138	Includes Couchbase Community Edition 6.0.0.
Dremio	zoomdata-edc-dremio	4.1 through 4.8	8142	
Elasticsearch 7.0	zoomdata-edc-elasticsearch-7.0	7.0 - 7.17	8139	
Elasticsearch 8.0	zoomdata-edc-elasticsearch-8-0	8.1 - 8.3	8147	
HDFS	zoomdata-edc-hdfs		8126	Separate download.
Hive	zoomdata-edc-hive	2.1 - 3.1	8132	
Jira Connector	zoomdata-edc-jira	Jira JDBC Driver 1.7.8.1002	8151	Separate download.
MemSQL	zoomdata-edc-memsql	7.1 - 7.6	8099	Install JDBC driver.
Microsoft SQL Server	zoomdata-edc-mssql	12.0 (SQL Server 2014) - 16.0 (SQL Server 2022)	8100	
MongoDB	zoomdata-edc-mongo	3.4 - 4.4	8123	
MySQL	zoomdata-edc-mysql	5.6 - 8.0	8101	Install JDBC driver.
Oracle	zoomdata-edc-oracle	11.2 - 21c	8102	Install JDBC driver.
PostgreSQL	zoomdata-edc-postgresql	9.6 - 14.0	8105	
Python	zoomdata-edc-python		8153	Install Docker image. See Manage The Python Connector .
Real Time Sales	zoomdata-edc-rt-s		8108	Must be enabled.
Salesforce	zoomdata-edc-salesforce	Simba Salesforce JDBC Driver 2.1.22	8152	Separate download.



Connector	Data Discovery Microservice	Supported Versions	Data Discovery Connector Port	Other Actions Required & Notes
SAP Hana	zoomdata-edc-saphana	2.0	8109	Separate download and install JDBC driver.
SAP S/4HANA	zoomdata-edc-saphanacloud	N/A	8205	Separate download and install JDBC driver.
SAP IQ	zoomdata-edc-sapiq	16	8121	Separate download and install JDBC driver.
Snowflake	zoomdata-edc-snowflake	whatever is currently supported in the cloud	8131	Separate download.
Spark SQL	zoomdata-edc-sparksql	2.3 - 3.0	8116	
Teradata	zoomdata-edc-teradata	16.20	8111	Separate download and install JDBC driver.
TIBCO DV	zoomdata-edc-tibcodv	8.0-8.1	8140	Separate download and install JDBC driver. The default TDV server port for JDBC connections is 9401.
Trino	zoomdata-edc-trino	351-390	8148	Separate download.
Vertica	zoomdata-edc-vertica	7.2	8112	Separate download and install JDBC driver.

In addition to the official Symphony connectors listed above, Symphony allows you to:

- Upload a [flat file](#) for viewing in visuals and dashboards.
- Dynamically upload and stream your data in real time using the Symphony [Upload API](#).

Both the [flat file uploads](#) and the [Upload API](#) use port 8105 and require that PostgreSQL be enabled. While these processes are not strictly data connectors, they are additional methods of providing data for Symphony.



- Archive of documentation for Logi Symphony v24

Connecting to Access

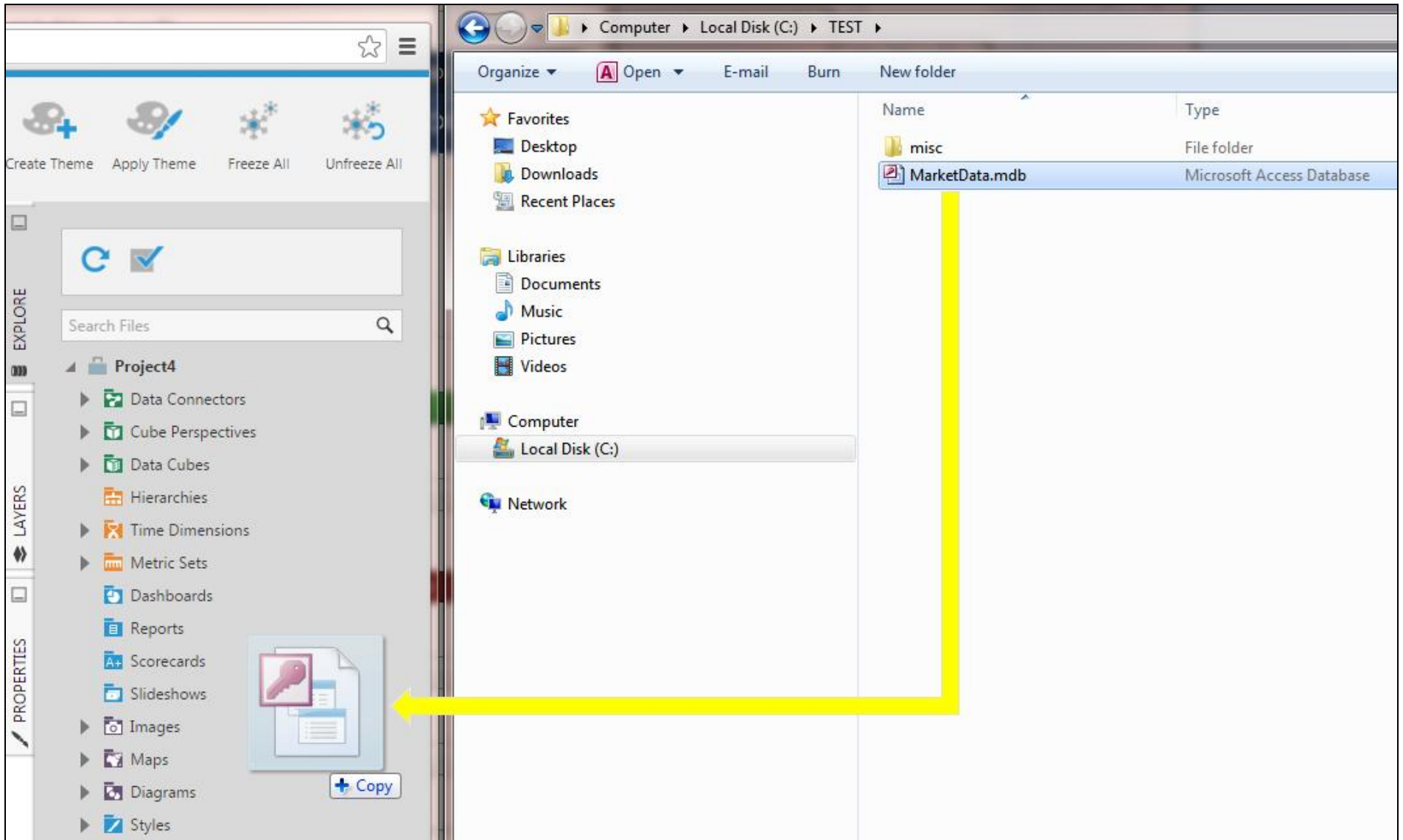
This applies to: *Managed Dashboards, Managed Reports*

This article describes options available when connecting to a Microsoft Access file data source.

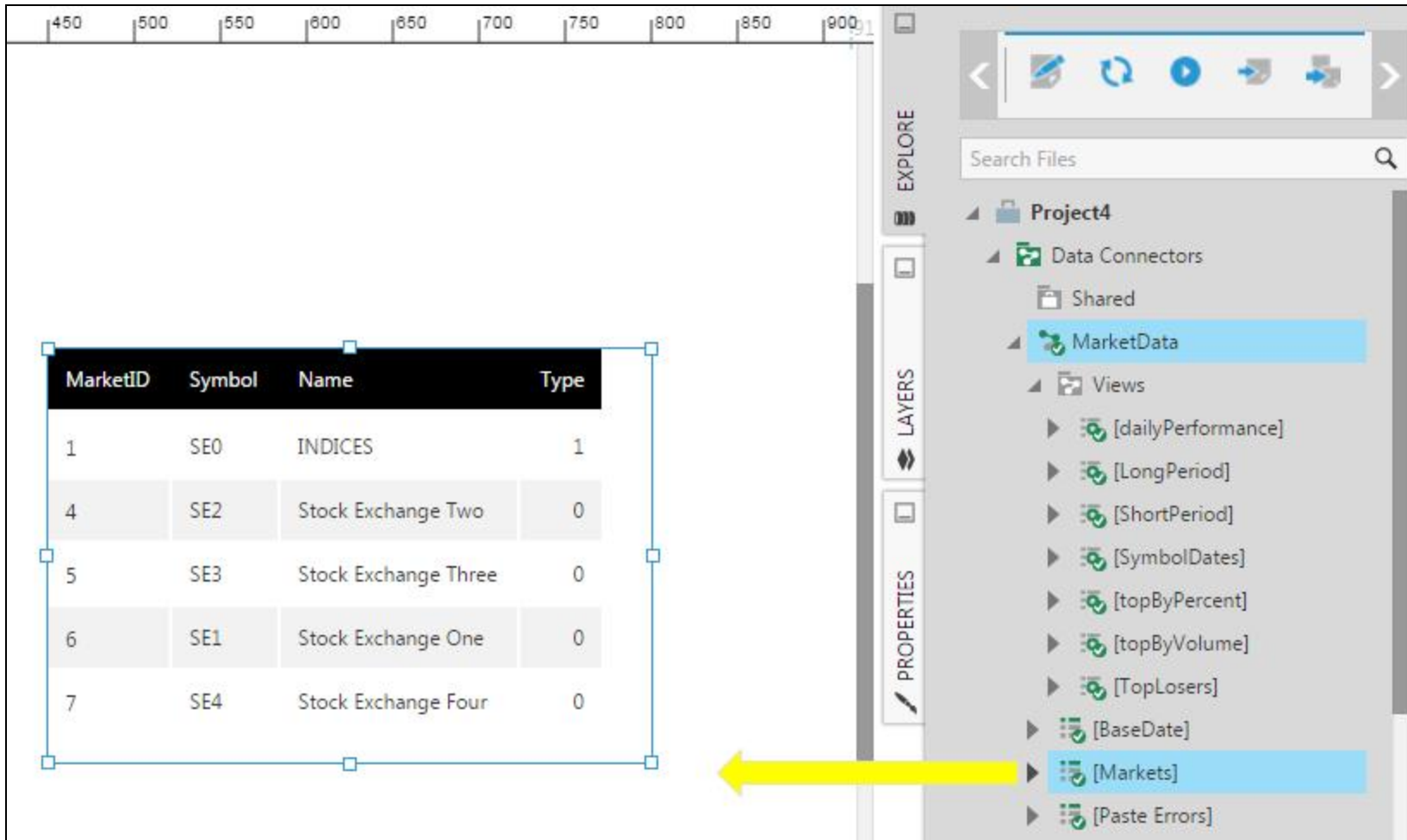
Main article: [Connect to Data and View it on a Dashboard](#)

Drag and Drop an Access File

The easiest way to work with an Access file is to drag it from Windows Explorer or Finder and drop it directly into Symphony, onto the **Explore** window or the canvas of the file you're working on.



This will automatically create a corresponding data connector in Symphony. Expand the data connector and drag a table to the canvas to see its data.



The screenshot shows the Logi Symphony interface. On the left, a data table is displayed with the following columns: MarketID, Symbol, Name, and Type. The table contains six rows of data. On the right, the 'EXPLORE' panel shows a file tree for 'Project4'. The 'MarketData' folder is expanded, showing a list of views. A yellow arrow points from the '[Markets]' view in the file explorer to the data table on the left.

MarketID	Symbol	Name	Type
1	SE0	INDICES	1
4	SE2	Stock Exchange Two	0
5	SE3	Stock Exchange Three	0
6	SE1	Stock Exchange One	0
7	SE4	Stock Exchange Four	0

File Explorer (EXPLORE) Structure:

- Project4
 - Data Connectors
 - Shared
 - MarketData
 - Views
 - [dailyPerformance]
 - [LongPeriod]
 - [ShortPeriod]
 - [SymbolDates]
 - [topByPercent]
 - [topByVolume]
 - [TopLosers]
 - [BaseDate]
 - [Markets]
 - [Paste Errors]

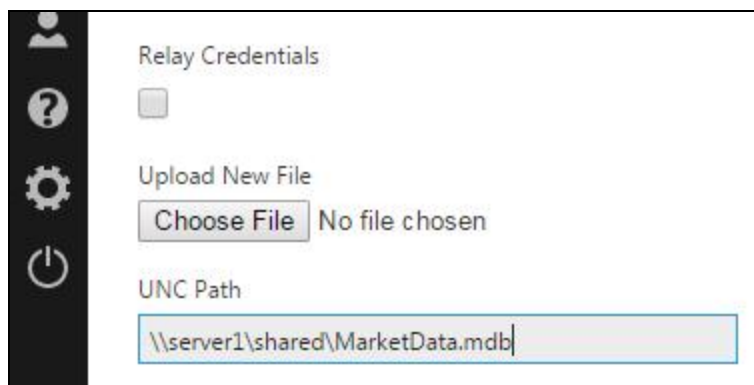
This is similar to [dragging and dropping an Excel file](#).

Connect To the Access File

You can also create a data connector, then either choose a file to upload or specify its location. See [Connect to Data and View it on a Dashboard](#).

After setting the **Data Provider** to *Microsoft Access* for a data connector, specify the Access file you want to connect to using one of these options:

- Select **Choose File** and select an Access file to upload to Symphony. This version of the file will be used as the data source, and it will not be updated with any future changes unless replaced by editing the data connector and uploading a new file in its place.
- Or, use the **Data Source** or **UNC Path** option to specify the full network path to the file. The data connector will access the file at this location, and changes to this file will be reflected in Symphony. Example: `\\server1\shared\MarketData.mdb`



Relay Credentials ☐

Upload New File

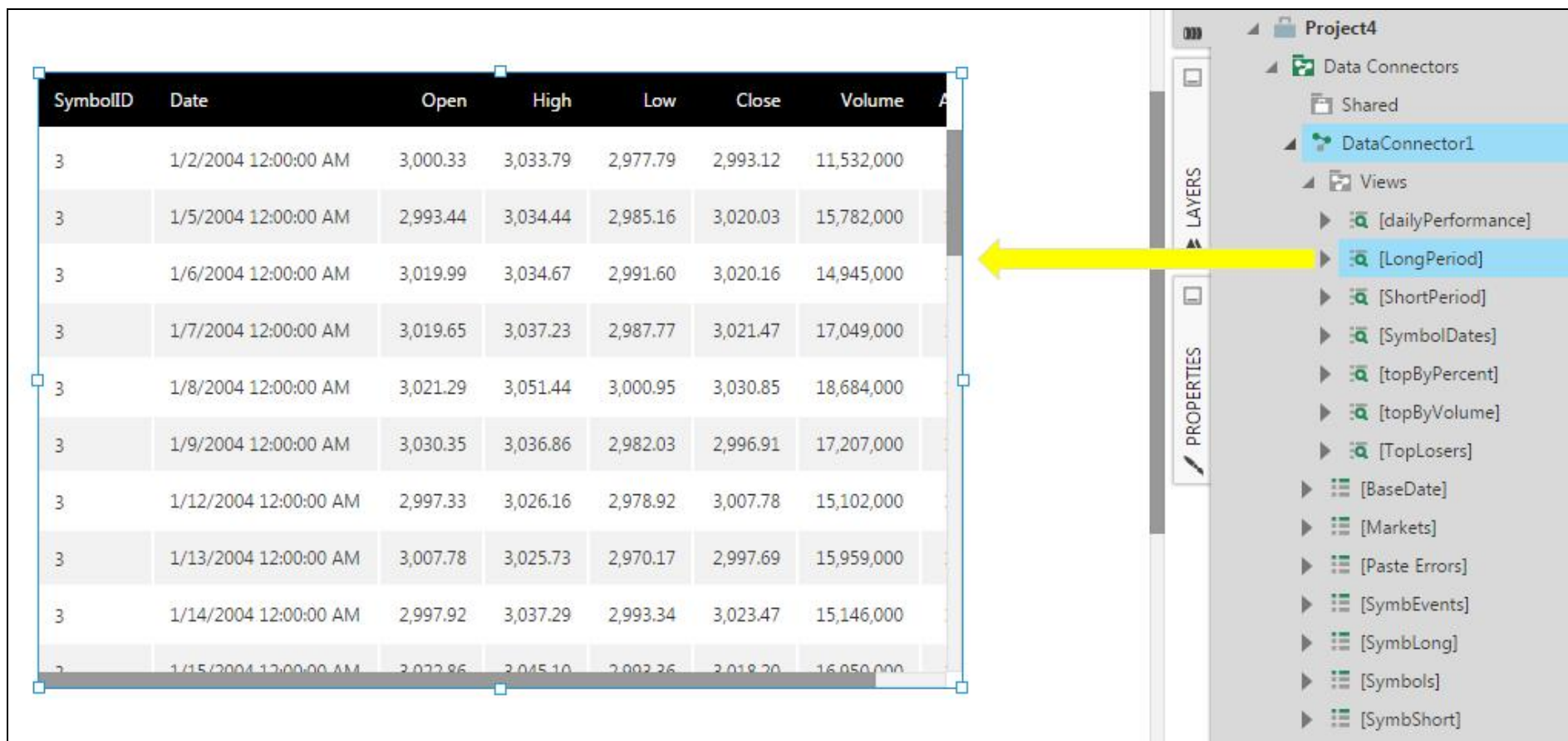
Choose File No file chosen

UNC Path

`\\server1\shared\MarketData.mdb`

If you specified the path to your file rather than uploading it, select the **Authentication** drop-down to choose an authentication method used for accessing the location you specified. For example, set it to *Specified Windows credentials* and enter the domain, username, and password for a Windows account that has access to the file.

In typical cases, you can simply select **Submit** to create the data connector, but there are some advanced options you can set as described in later sections.



SymbolID	Date	Open	High	Low	Close	Volume	A
3	1/2/2004 12:00:00 AM	3,000.33	3,033.79	2,977.79	2,993.12	11,532,000	
3	1/5/2004 12:00:00 AM	2,993.44	3,034.44	2,985.16	3,020.03	15,782,000	
3	1/6/2004 12:00:00 AM	3,019.99	3,034.67	2,991.60	3,020.16	14,945,000	
3	1/7/2004 12:00:00 AM	3,019.65	3,037.23	2,987.77	3,021.47	17,049,000	
3	1/8/2004 12:00:00 AM	3,021.29	3,051.44	3,000.95	3,030.85	18,684,000	
3	1/9/2004 12:00:00 AM	3,030.35	3,036.86	2,982.03	2,996.91	17,207,000	
3	1/12/2004 12:00:00 AM	2,997.33	3,026.16	2,978.92	3,007.78	15,102,000	
3	1/13/2004 12:00:00 AM	3,007.78	3,025.73	2,970.17	2,997.69	15,959,000	
3	1/14/2004 12:00:00 AM	2,997.92	3,037.29	2,993.34	3,023.47	15,146,000	
3	1/15/2004 12:00:00 AM	3,022.86	3,045.10	2,992.26	3,018.20	16,050,000	

Project4

- Data Connectors
 - Shared
 - DataConnector1
 - Views
 - [dailyPerformance]
 - [LongPeriod]
 - [ShortPeriod]
 - [SymbolDates]
 - [topByPercent]
 - [topByVolume]
 - [TopLosers]
 - [BaseDate]
 - [Markets]
 - [Paste Errors]
 - [SymbEvents]
 - [SymbLong]
 - [Symbols]
 - [SymbShort]



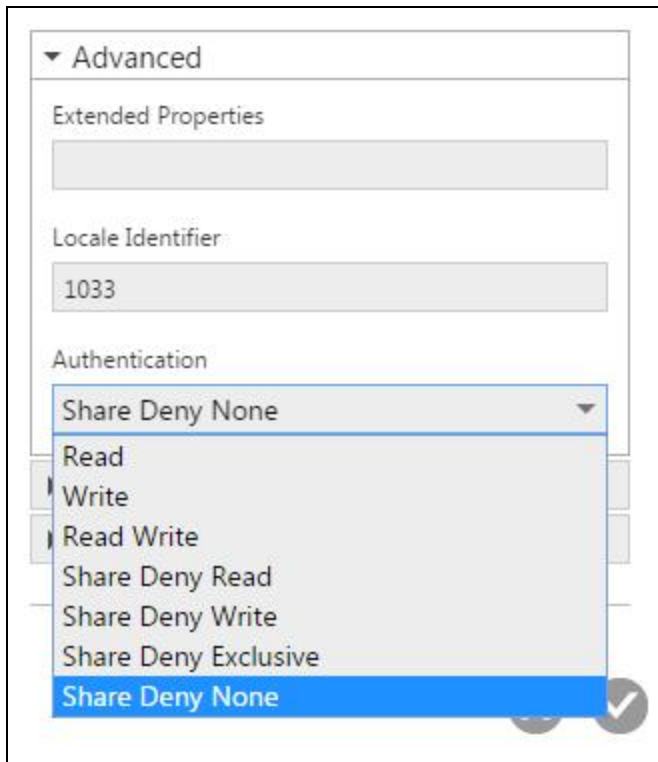
Note: The same third-party driver is required on the Symphony server to connect to Excel and Access files. If you experience a connection error with the above steps, see the [Excel Connection Issues](#) troubleshooting article for a resolution.

Options

The following options are available for the *Microsoft Access* data provider.

Advanced

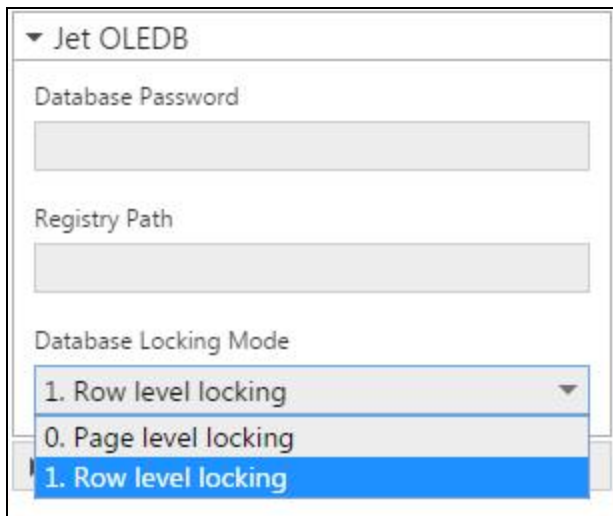
- **Extended Properties** - Provider-specific connection information that cannot be described explicitly through standard properties.
- **Locale Identifier** - The locale ID (LCID) specifies the database's collating order, which is the character set that will be used to determine how values in the database are sorted.
- **Authentication** - The authentication method to use.



Jet OLEDB

- **Database Password** - Required to open a password-protected database.
- **Registry Path** - The path to the registry subkey to use for Jet database engine settings.

- **Database Locking Mode** - Specifies the mode used when locking the database to read or modify records.

A screenshot of a configuration window titled "Jet OLEDB". It contains three input fields: "Database Password", "Registry Path", and "Database Locking Mode". The "Database Locking Mode" field is a dropdown menu with a blue border and a downward arrow. It shows a list of options: "1. Row level locking", "0. Page level locking", and "1. Row level locking". The first option is highlighted in blue.

Security

- **User ID** - The user's ID (for user-level security).
- **User Password** - The user's password (for user-level security)
- **System Database** - Specifies the location of the Microsoft Jet workgroup information

▼ Security

User ID

User Password

System Database

For more information, see:

- [Drag and Drop an Excel File](#)
- [Connect to Data and View it on a Dashboard](#)
- [Manage File Uploads](#)
- [Excel Connection Issues](#)



Manage the Amazon Redshift Connector

Connecting to Amazon Redshift in Visual Data Discovery

This applies to: *Visual Data Discovery*

The Symphony Amazon Redshift connector lets you access the data available in Amazon Redshift storage using the Symphony client. The Amazon Redshift connector supports Amazon Redshift version 1.0.

Before you can establish a connection from Symphony to Amazon Redshift storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To Amazon Redshift In Visual Data Discovery](#) and [Troubleshoot The Amazon Redshift Connector](#) for details specific to the Amazon Redshift connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N

Feature	Supported?
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A
Nested Fields	N/A
Partitions	N/A
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y



Note: Amazon Redshift returns whole numbers for aggregates on columns of type DECIMAL and NUMERIC types which have a 0 scale (in other words, 0 decimal places).

Connect to Amazon Redshift in Visual Data Discovery

Verify the MTU Size of Symphony

Before you can establish a connection between Amazon Redshift and Symphony, you must verify that the size of the maximum transmission unit (MTU) on your Symphony server is set to 1500.

The MTU size determines the maximum size, in bytes, of a packet that can be transferred in one Ethernet frame over your network connection. If your MTU size is too large for the connection, you might experience incomplete query results, your query might hang, or the connection might be dropped altogether. For more information, see: <https://docs.aws.amazon.com/redshift/latest/mgmt/connecting-drop-issues.html>.

To review the MTU value, use the `ip` command:

```
$ ip addr show eth0
```

If you need to edit the MTU value and set the size to 1500, use the following `ip` command:



```
$ ip link set dev eth0 mtu 1500
```

Configure and Reference the JDBC Driver

The Amazon Redshift connector requires a JDBC driver to be configured before you connect. You can download the driver from the vendor's site. If you are upgrading, keep in mind you need to configure the JDBC driver. For more information, see [Add A JDBC Driver](#). The JDBC Driver for Redshift has more than one jar file that needs to be downloaded: be sure to place the files in the same location to avoid any issues.

When setting up your Amazon Redshift connection, you need to specify the JDBC URL. You can find the URL on the **Configuration** tab of a cluster under **Cluster Database Properties**. The format varies slightly based on the type of database being connected. For Amazon Redshift, use the following format:
`jdbc:redshift://HOSTNAME:PORT/DATABASE_NAME` . If authentication has been set up, provide the user name and password.

Connect to Amazon Redshift in Managed Dashboards and Reports

This applies to: *Managed Dashboards, Managed Reports*

Main article: [Connect to Data and View it on a Dashboard](#)

AWS Account

Use your AWS account to set up Amazon Redshift and find its connection details.

Sign in to your AWS Management Console and open the Amazon Redshift console at <https://console.aws.amazon.com/redshift/>.

Open the details for your cluster and find and copy the **ODBC URL**, which contains the connection string. For details, see [Amazon Redshift's getting started guide](#) on how to get your connection string.

Data Connector Settings

Once you have your connection string, you can set up a [data connector](#) in Symphony. Set **Data Provider** to *Amazon Redshift*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Test connection 

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Connection String

Password

► Initialization

► Pooling

[Select structures](#) 



- Archive of documentation for Logi Symphony v24

Paste the **Connection String**, and enter the **Password** if not already included in the connection string.

Additional options such as **Search Path** for specifying schemas are available by selecting the expandable sections below. You can also select **Test connection** to check your connection.



Note: When using tenant overrides to connect to different databases, expand the Initialization section and select Single Schema to discover and use database structures without prefixing the original database (schema) name in queries.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [Selecting Structures For Data Connector Discovery](#)
- Amazon Redshift: [search_path](#)

Connecting to Azure Table / Azure Cosmos DB

This applies to: *Managed Dashboards, Managed Reports*

This article provides additional details on how you can connect to data stored in Microsoft Azure Table storage or Azure Cosmos DB tables.

When connecting to Azure Cosmos DB, accounts using the [Azure Table](#) API are supported.



Note: To connect to Azure SQL or Azure Synapse, use the [Microsoft SQL Server data provider](#).

Main article: [Connect to Data and View it on a Dashboard](#)

Azure Resource

Use the [Azure Portal](#) to set up your service resource. You will need either an Azure Storage resource or an Azure Cosmos DB resource set up that Symphony can access via its network/IP address.

You will need the *connection string* to access your resource to add a data connector for it in Managed Dashboards.

Azure Storage Tables

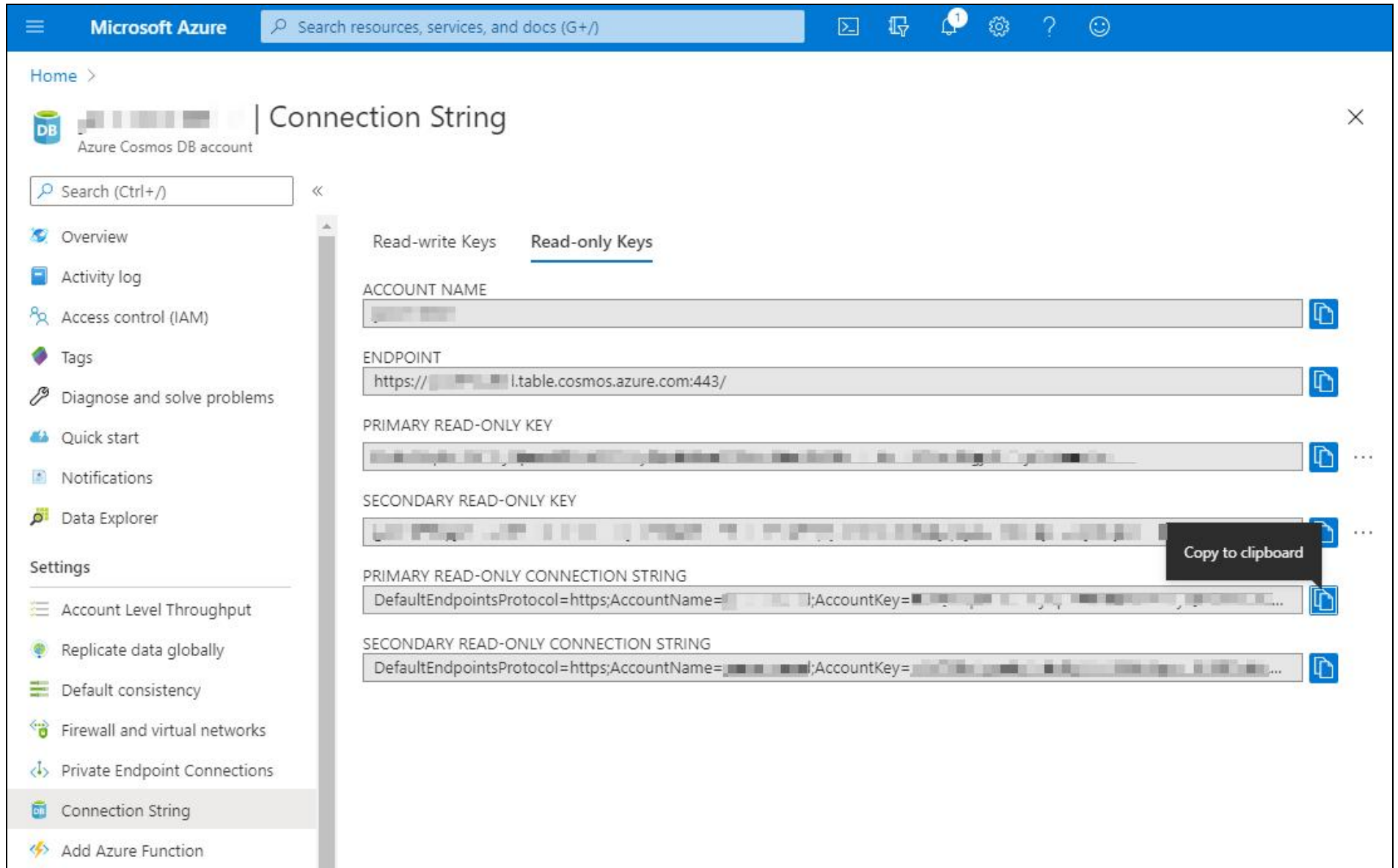
When creating an [Azure Storage account](#), choose an account type such as "general purpose" that includes support for table storage. For a walkthrough, see [Create an Azure Storage account](#).

The connection string is one of the **Access Keys** for the account, which you can find from the Azure Portal once the resource is set up, and you can copy it to the clipboard. For details, see [Manage storage account access keys](#).

Azure Cosmos DB

When creating an Azure Cosmos DB account, use the [Table API](#) option by choosing *Azure Table* as the API. A [tutorial](#) is available that includes creating an account.

To connect to your resource, you can navigate to its **Connection String** settings in the Azure Portal. You can typically choose **Read-only Keys** and copy your connection string to the clipboard.



Microsoft Azure Search resources, services, and docs (G+)

Home > **Connection String** (Close)

Azure Cosmos DB account

Search (Ctrl+/) <<

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Quick start
- Notifications
- Data Explorer

Settings

- Account Level Throughput
- Replicate data globally
- Default consistency
- Firewall and virtual networks
- Private Endpoint Connections
- Connection String**
- Add Azure Function

Read-write Keys **Read-only Keys**

ACCOUNT NAME [Copy]

ENDPOINT `https://[redacted].table.cosmos.azure.com:443/` [Copy]

PRIMARY READ-ONLY KEY [Copy] ...

SECONDARY READ-ONLY KEY [Copy] ...

PRIMARY READ-ONLY CONNECTION STRING `DefaultEndpointsProtocol=https;AccountName=[redacted];AccountKey=[redacted]` [Copy] **Copy to clipboard**

SECONDARY READ-ONLY CONNECTION STRING `DefaultEndpointsProtocol=https;AccountName=[redacted];AccountKey=[redacted]` [Copy]

Data Connector Settings

Once you have your connection string as shown above, create a [data connector](#) and set **Data Provider** to *Azure Table / Azure Cosmos DB*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Azure Table / Azure Cosmos DB

Test connection 

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Connection String

Account Key

Define structure 

Paste or type in your **Connection String**.

Connection strings copied from the Azure Portal typically already include the **Account Key** or access key, in which case you can leave this next field blank.



- Archive of documentation for Logi Symphony v24

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- Microsoft Docs: [Introduction to Azure Cosmos DB: Table API](#)
- Microsoft Docs: [Introduction to Table storage in Azure](#)



Manage the BigQuery Connector

This applies to: *Visual Data Discovery*

The Symphony BigQuery connector lets you access the data available in Google BigQuery storage using the Symphony client. The Symphony BigQuery connector supports the current version of this software as a microservice (SaaS) product.

The Symphony BigQuery connector is a cloud connector that connects to Google BigQuery via the BigQuery API. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To BigQuery In Visual Data Discovery](#) for details specific to the BigQuery connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N/A
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A

Feature	Supported?
Nested Fields	N/A
Partitions	Y
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	N/A
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y

Connect to BigQuery in Visual Data Discovery

When connecting to BigQuery, provide the following information:

- **Key Path:** you have to specify the absolute path to the file that must be available for the connector.
- **Public Project IDs.**

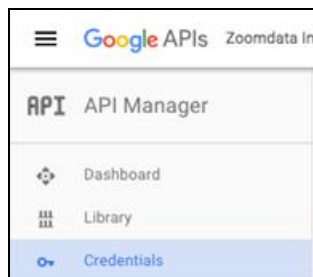
For more information about these values, refer to Google BigQuery's documentation.

Authorize the BigQuery Connection

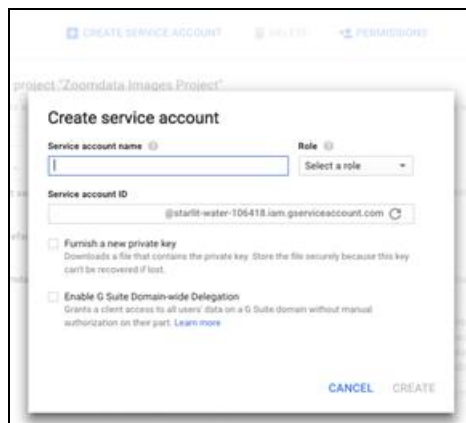
To authorize the BigQuery connection, you need to create a security key for it. Before you can create the security key, you must access or create a BigQuery microservice account.

Create a BigQuery microservice account

1. Login to your Google API Console.
2. Select the required project from the list.
3. Make sure that current account is linked to a billing account. To check this, select the menu () icon and then select **Billing**.
4. On the API Manager page, select **Credentials**:



5. On the Credentials page, select **Manage service accounts**.
6. On the Service Accounts page, select **Create Service Account** and specify the following:
 - i. Service account name
 - ii. Role - grant this microservice account role based access to the project. From the list, select the **BigQuery** category and then select **BigQuery Data Viewer** and **BigQuery User** roles.
 - iii. Service account ID



7. Select **Create**.

After you have created an account, create a security key for it.

Create a security key



1. On the **Service Accounts** page, find the required account.
2. From the menu, select **Create key**.
3. In the Create private key dialog, select **JSON** for the key type and select **Create**. The local copy of the key is saved on your computer.
For more information, see the following Google resource: [BigQuery Introduction to Authentication](#).
4. Move the file with the key to the server, on which the connector is running.

Connect to BigQuery Using OAuth

To create a BigQuery connection use one of the available authentication methods:

- Key authentication flow requires a security key to be generated at BigQuery and placed to the Symphony instance;
- OAuth 2.0 requires providing OAuth `client_id` and `client_secrets` generated for a user that will serve for data retrieval, such as an integration user. Users are asked to authenticate via a separate authentication form. Users provide their individual credentials when accessing the data retrieved using this connection.

If both authentication methods are selected, connection via OAuth will have higher priority over key authentication except for the scheduled overrides setup.

	Authentication Flow	
Key Path	Key Authentication	Absolute path to the key authentication file obtained from BigQuery and placed to Symphony instance.
Public Project Ids		List of public project IDs that will be queried for the data.

	Authentication Flow	
OAuth 2.0 Enabled	OAuth 2.0	TRUE/FALSE
Project Id		Billing project ID that will be queried for the data.  Note: Optional if keys authentication is used.  Important: Mandatory if OAuth 2.0 connection is enabled.
OAuth 2.0 Client Id		client_id: Obtain from BigQuery. See https://cloud.google.com/bigquery/docs/authentication/end-user-installed .
OAuth 2.0 Client Secrets		client_secrets: Obtain from BigQuery. See https://cloud.google.com/bigquery/docs/authentication/end-user-installed .

Scheduled Override Options

To maintain Visual Data Discovery's ability to perform scheduled operations such as scheduled dashboard reports, alerts notifications, and more when using OAuth 2.0 authentication flow, you can setup scheduled overrides with key authentication method by providing a key path.

Additional OAuth 2.0 parameters available for override, however, already have prepopulated BigQuery values and do not require manual editing:

- `OAUTH2.AUTHORIZATION_URI`
- `OAUTH2.TOKEN_URI`
- `OAUTH2.SCOPE`



Note: Scheduled source refresh is not available when you use OAuth 2.0 authentication.

To avoid frequent authentication requests for users, Symphony operates with long-lived tokens and preemptively refreshes the tokens when they are close to expiration.



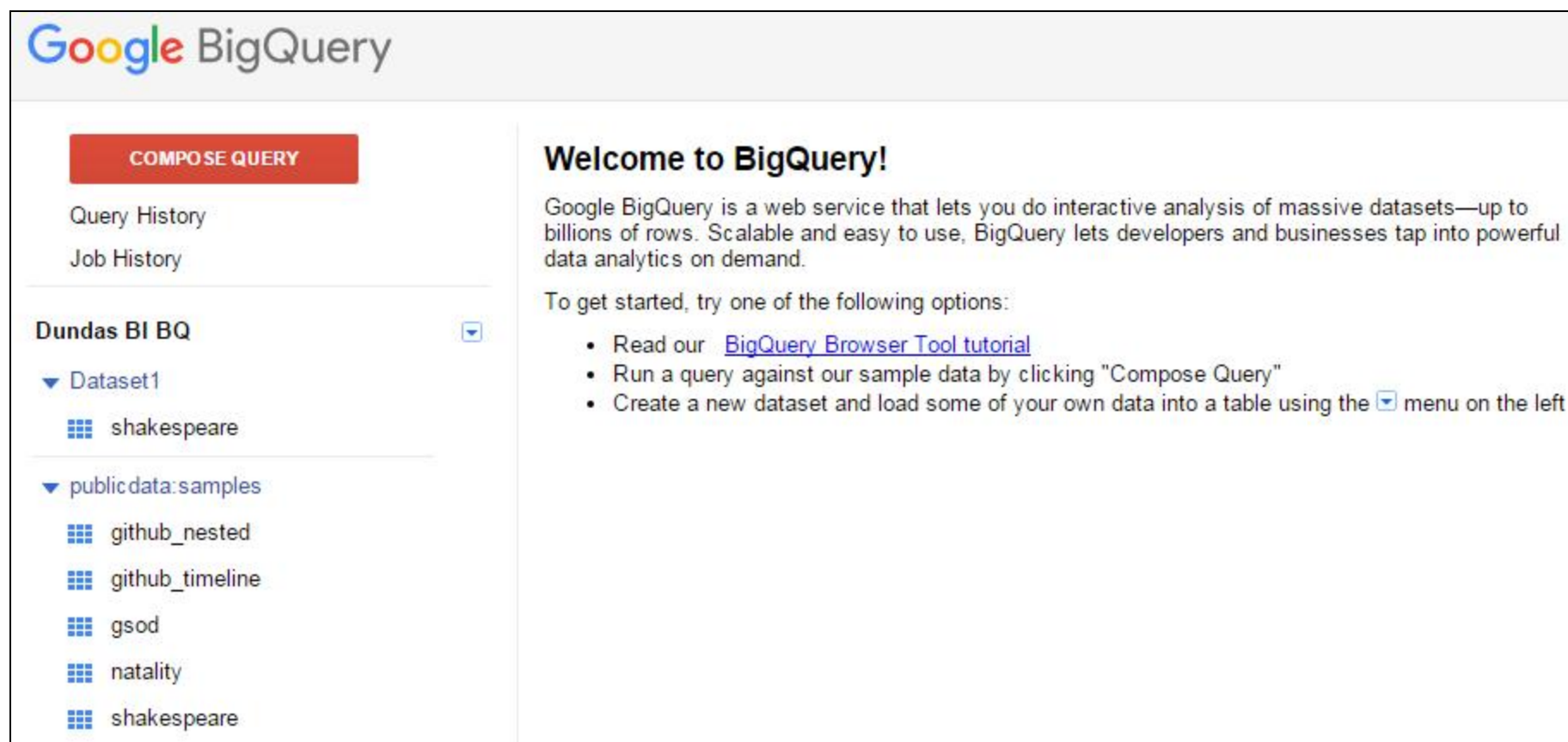
Important: Users' OAuth sessions are terminated when the OAuth token is revoked, if the connection is deleted, or connection details are modified.

Connect to Google BigQuery in Managed Dashboards

This applies to: *Managed Dashboards, Managed Reports*

[Google BigQuery](#) is a web service for querying massive datasets that take advantage of Google's cloud infrastructure.

Create a data connector in Symphony to extract data from your Google project via the BigQuery API.



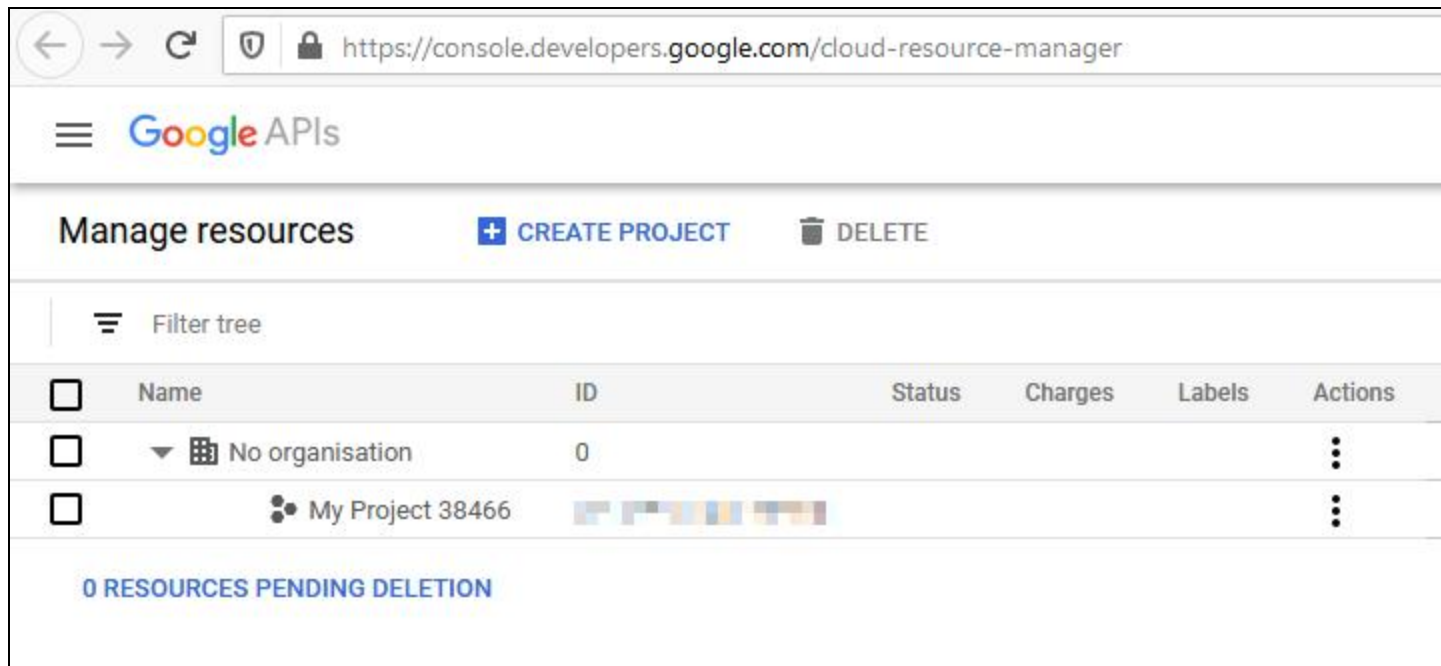
Setup

Create or Choose a Project

Go to <https://console.cloud.google.com/> and sign into your Google account.

Once signed in, you can create or choose an existing project to use. The current project is often listed at the top of the screen and you can click to see a list of projects and switch between them or to create a new one.

The [cloud resource manager](#) page should also list your projects and allow you create a new one. A project acts as a container in the Google Cloud Platform which stores information about billing and authorized users and contains BigQuery data.



Manage resources [+ CREATE PROJECT](#) [DELETE](#)

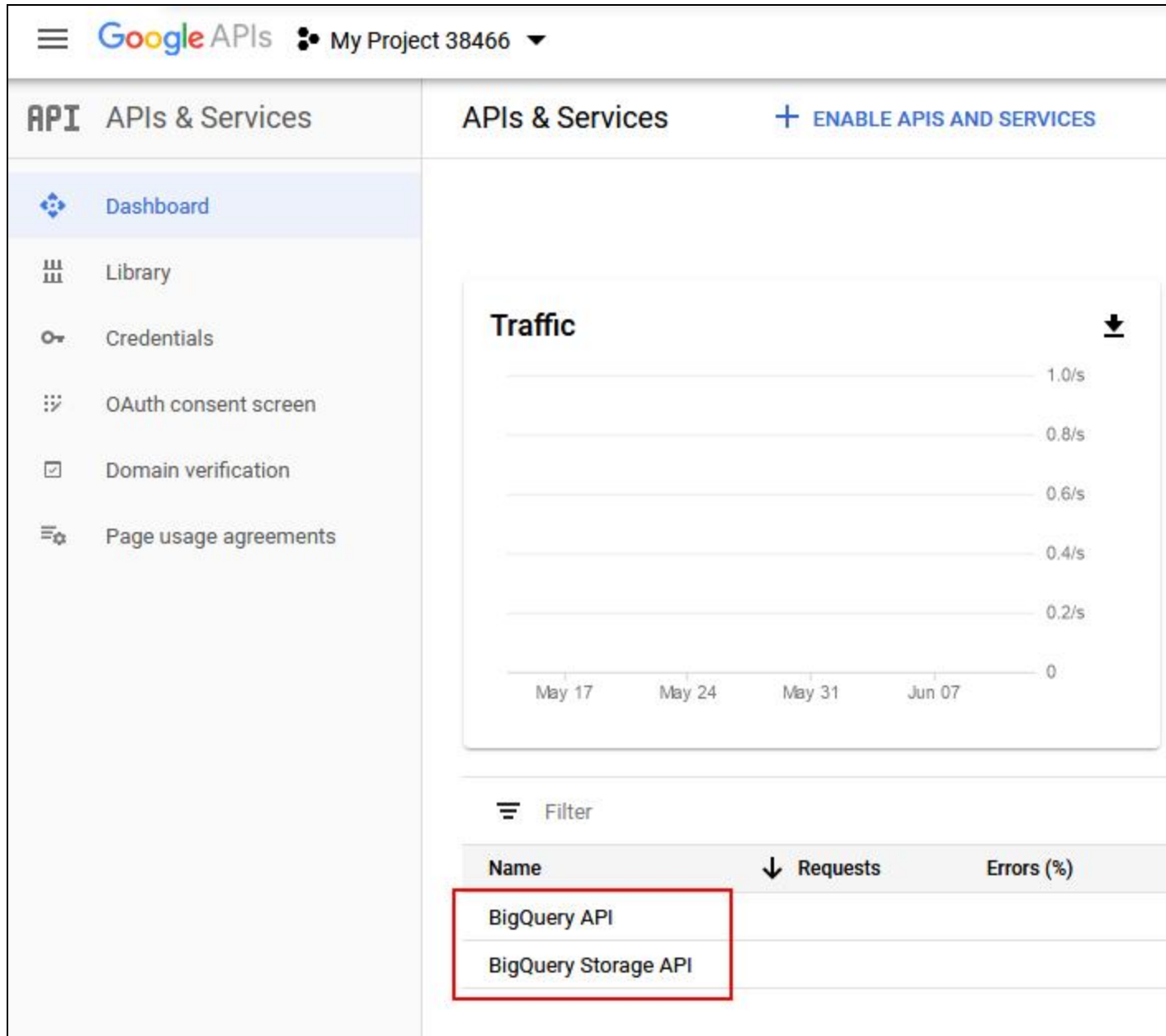
Filter tree

☐	Name	ID	Status	Charges	Labels	Actions
☐	▼ No organisation	0				⋮
☐	My Project 38466					⋮

0 RESOURCES PENDING DELETION

Enable the BigQuery API

To check that the BigQuery API is enabled, select the menu button in the top-left corner, and go to the [API & services dashboard](#).

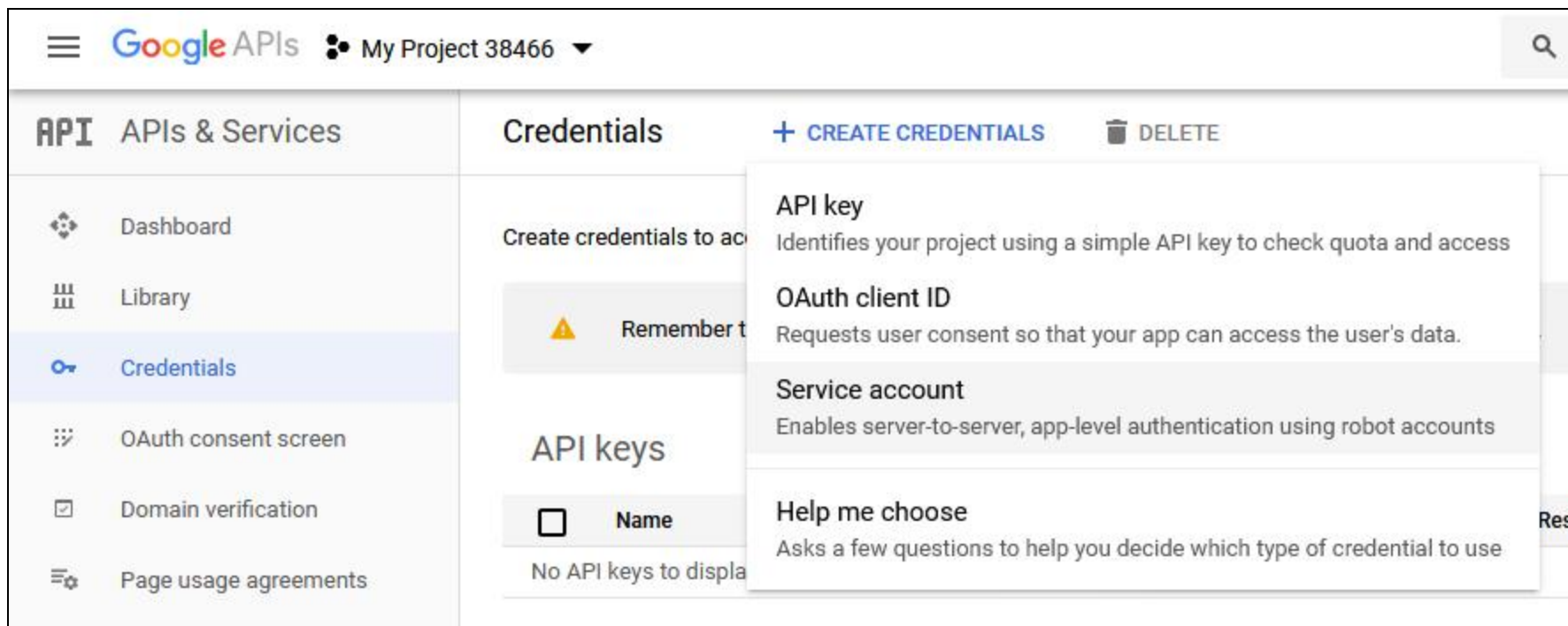


Ensure your project is selected as the current project in the top-left corner. You can enable the BigQuery API on this page if not already listed.

Service Account Credentials

Service account credentials are needed to allow Symphony to access your data.

To create or manage service accounts, in the API Manager, select **Credentials** in the left navigation. On the right, select **Create credentials** and select **Service account**.



Enter a name and role for your service account.

When done, add a key for your service account. For example, click to edit the service account, go to the **Keys** tab if applicable, then select **Add Key**. Choose a **JSON** key type.

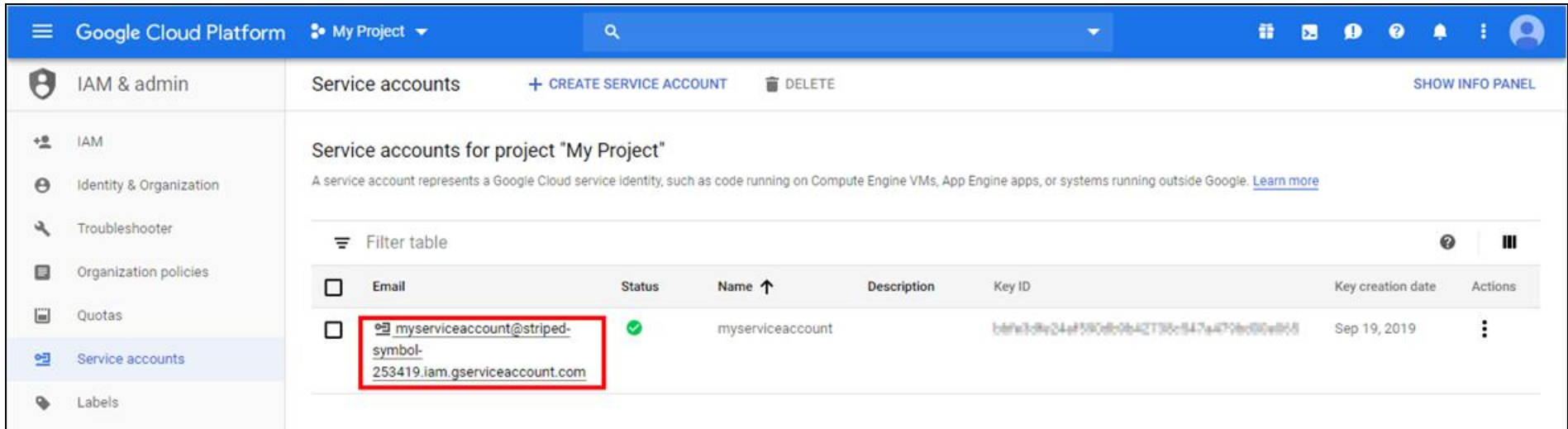
When finished, a certificate file should be downloaded. This file will be needed later to set up a data connector in Symphony.

P12 file type

If you require the P12 key type instead of the default JSON, you will require some additional information.

A popup should be displayed showing the **password** for the private key. Copy and paste this password into Notepad or similar for later use.

You will also need the service account **email address**. Copy this from the service account details and paste it with your password.



The screenshot shows the Google Cloud Platform IAM & admin console. The left sidebar lists navigation options: IAM & admin, IAM, Identity & Organization, Troubleshooter, Organization policies, Quotas, Service accounts (selected), and Labels. The main content area is titled 'Service accounts' and shows 'Service accounts for project "My Project"'. A table lists the service accounts:

Email	Status	Name	Description	Key ID	Key creation date	Actions
my-service-account@stripe-symbol-253419.iam.gserviceaccount.com	✓	my-service-account		1b1e13d8c34ef580e8c9b42778c1847e479e00e808	Sep 19, 2019	⋮

Enable Billing

Billing must be enabled for your Google project in order to load data into the project. If you do not have this set up yet, you can sign up for a free trial from <https://cloud.google.com/bigquery/>.

Next, go back to the Google Developers Console for your project. Select the menu button in the top-left corner and then select **Billing**.

Ensure billing is enabled, and you may need to log out and log back in for the changes to take effect.

Public Datasets

Google provides public datasets which you can copy and query using BigQuery. See <https://cloud.google.com/bigquery/sample-tables> for more details.

For example, you can create a new dataset in your Google project, and copy tables from a public dataset such as **Shakespeare** (which is one of the smaller datasets).




COMPOSE QUERY

Query History
Job History

Dundas BI BQ

Dataset1

shakespeare

publicdata:samples

github_nested
github_timeline
gsod
natality
shakespeare

Table Details: shakespeare

Schema

word	STRING	REQUIRED	A single unique word (where whitespace is the delimi
word_count	INTEGER	REQUIRED	The number of times this word appears in this corpus.
corpus	STRING	REQUIRED	The work from which this word was extracted.
corpus_date	INTEGER	REQUIRED	The year in which this corpus was published.

New Data Connector

In Symphony Managed Dashboards, create a new data connector from the main menu.

Set the **Data Provider** drop-down to *Google BigQuery*.

Select **Choose File** and select the certificate file that you downloaded.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Google BigQuery

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Upload Private Key File (.P12 Or .JSON)

No file chosen

Billed Project

Catalog Projects

Processing Location

Auto-select (US/EU)

► Advanced

If the certificate file is of a P12 file type, you now have to provide the **Service Account E-Mail Address** and **Password For The .P12 File** that you copied for later reference.

Leave the **Catalog Projects** field blank and select a **Billed Project** from the drop-down.

Select **Submit** to create the data connector and begin discovery.

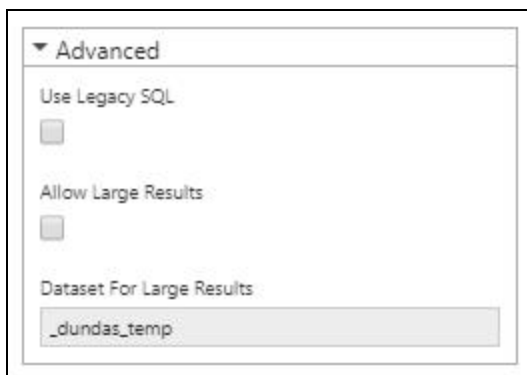


Note: The **Catalog Projects** field can be used instead of the billed project to specify free catalogs such as *publicdata,gdelt-bq,fh-bigquery* (comma separated). If you specify catalog projects but you also want to include the billed project, you must add the billed project to the Catalog Projects field.

Advanced

Expand the **Advanced** section for additional options.

Use the option **Use Legacy SQL** to switch the data connector from using standard SQL to legacy SQL.



Use the option **Allow Large Results** to avoid data connector errors such as *Response too large to return*. To use this option, you have to create a dataset for storing large results on the Google Cloud Platform.



Note: Check the option to *Expire new tables in one day* when creating a dataset in the Google Cloud Platform.



Connecting to Exasol

This applies to: *Managed Dashboards, Managed Reports*

This article provides additional details on connecting to an Exasol database.

Main article: [Connect to Data and View it on a Dashboard](#)

Drivers

Drivers for Exasol are included with Symphony.

Data Connector Settings

Create a [new data connector](#) and set **Data Provider** drop-down to *Exasol Database*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is saved, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Server

User Name

Password

Schemas

► Advanced



- Archive of documentation for Logi Symphony v24

Enter the **Server** name or address and the required **User Name** and **Password** credentials. Other connection information such as the port number can be customized by expanding the **Advanced** section.

Enter one or more **Schemas** (separated by commas) to connect to them rather than the user's schema.



Connecting to Excel

This applies to: *Managed Dashboards, Managed Reports*

This article shows you how to connect to Microsoft Excel (XLS/XLSX/XLSM) files by creating a data connector. This is usually for connecting to an Excel file that exists on your network or the internet rather than importing the data directly into Symphony.

Drag and drop an Excel file

The easiest way to work with an Excel file is to drag it from Windows Explorer or Finder and drop it directly into Symphony. This will automatically import the Excel data to Symphony and create a corresponding data connector.

See [Drag and Drop an Excel File](#) for more details.

Connect to an Excel File

You can Manually create a data connector for an Excel file with two sheets of data.

To begin, go to the main menu, select **New**, and then select **Data Connector**.

In the **New Data Connector** dialog, select inside the **Name** box and enter a name for your data connector.

Select the **Data Provider** drop-down and choose *Microsoft Excel*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Test connection  

DATA PROVIDER INFORMATION

Next, specify the Excel file using one of two options:

- Select **Choose File** or **Browse** and use the file selector to select an Excel file to import into Symphony. Note that changes to the original file afterward will not be reflected in Symphony unless you edit this data connector later and upload the updated file in its place.
- Or, use the **File Path** option to specify a web or network address to access the file (a URL or a UNC path). A UNC path example is `\\Server1\Shared\Latest.xlsx`. Changes to the data in this file will be reflected in Symphony afterward.

Test connection


DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials


Upload New File

Choose File
No file chosen

File Path

\\Server1\Shared\Latest.xlsx

▶ Advanced

Define structure



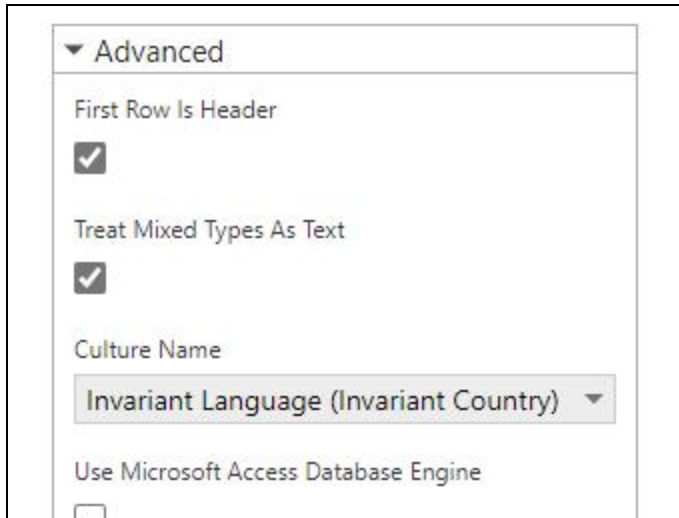

Note: An imported file will be automatically warehoused after the first use to improve performance.

When using a UNC path, use the **Authentication** drop-down to choose the authentication method used to connect to the file. For example, set it to *Specified Windows credentials* and enter your domain, username, and password on Windows.

Expand the **Advanced** section for some additional options, such as:

- If the first line of your Excel sheets does not contain header text, clear **First Row Is Header**.
- If you do not want columns with a mixture of text and numbers to be interpreted as text, clear **Treat Mixed Types As Text**.

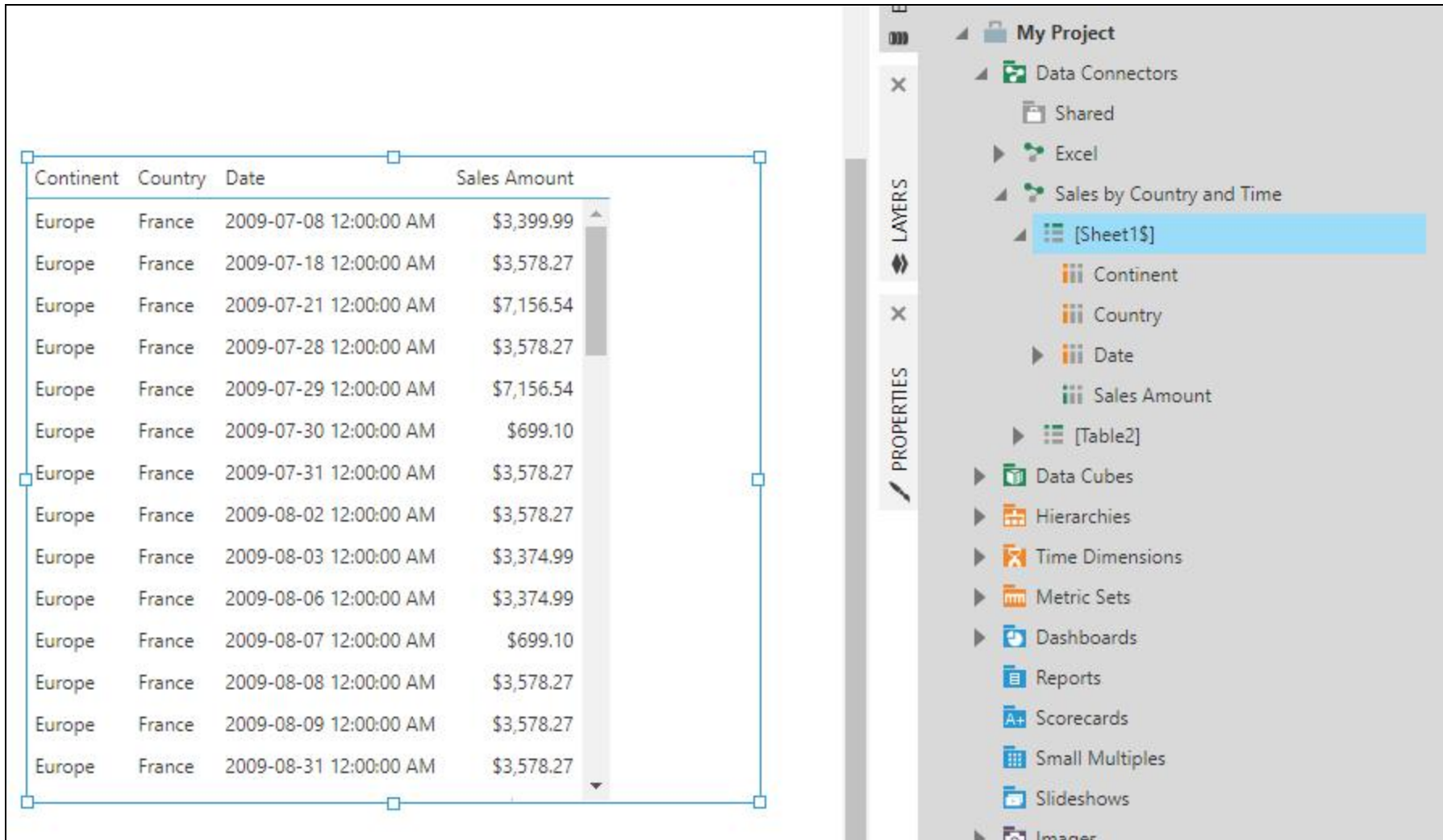
- If your data is culture-specific, select the **Culture Name** from the drop-down. This will enable Symphony to convert the data to the proper format for each culture.



The **Define structure** option lets you add additional tables or sheets to list under the Excel data connector, and edit column details such as its data type in case these were not discovered automatically. It is recommended to first submit the new data connector dialog and let the auto-discovery run when creating a data connector, and then you can go back to edit it if necessary.

When finished, select **Submit** at the bottom of the dialog.

When choosing data in a metric set or dragging data from **Explore** onto a dashboard canvas, you can now find and expand the newly added data connector to see its discovered sheets and tables. For example, choose a column of data to start with, or you can drag an entire sheet onto a dashboard canvas to see its data displayed in a table visualization (in *Raw Data* format).



The screenshot displays the Logi Symphony v24 interface. On the left, a data table is shown with the following columns: Continent, Country, Date, and Sales Amount. The table contains 15 rows of data, all from Europe, France, spanning from July 8, 2009, to August 31, 2009. The Sales Amount column shows values ranging from \$699.10 to \$7,156.54.

On the right, a sidebar menu is visible under the heading 'My Project'. The menu includes sections for 'Data Connectors' (Shared, Excel, Sales by Country and Time) and 'Data Cubes' (Hierarchies, Time Dimensions, Metric Sets, Dashboards, Reports, Scorecards, Small Multiples, Slideshows, Images). The 'Sales by Country and Time' section is expanded, showing a list of data sources: '[Sheet1\$]', 'Continent', 'Country', 'Date', 'Sales Amount', and '[Table2]'. The '[Sheet1\$]' source is currently selected.

Define Tables and Columns

After the initial creation and discovery of the Excel data connector, you can redefine properties of the tables and columns as needed.

First, go to **Explore** or the main menu and locate the Excel data connector. Right-click (or long tap) the data connector and choose **Edit**.

In the data connector dialog, scroll down and select **Define structure**.


CityData

more help

Edit the existing data connector. You can't change the name or the provider. If you want to do that, create a new one.

Name

Data Provider

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Upload New File

 No file chosen

UNC Path

Advanced

Check in

☒

Add a check in comment


Define Data Structure

A data structure lets you define exactly how the expected structure for a data connector will be. This applies to many tabular providers, such as web services, where the structure can't be automatically detected.

TABLES

Name	Edit
[Sheet2\$]	
[Sheet1\$]	

Add Table



- Archive of documentation for Logi Symphony v24

In the *Define Data Structure* dialog, select a table (which corresponds to an Excel sheet) and then scroll down to see its discovered columns and tables. The columns and tables are discovered on-demand so if you don't see any listed, select **Re-discover table**.

TABLES

	Name	Edit
	[Sheet2\$]	
	[Sheet1\$]	

Add table



TABLE DETAILS

Name

[Sheet2\$]

Description

Range Type

Worksheet



Worksheet

Sheet2

Re-discover table



COLUMNS



- Archive of documentation for Logi Symphony v24

Select a column or table and then set the details for the column as needed.

COLUMNS

	Name	Type
☐	City	String
☐	Longitude	Double
☐	Latitude	Double
☐	Population	Int32
☒	Sales	Currency

COLUMN DETAILS

Primary Key

☐

Skipped

☐

Name

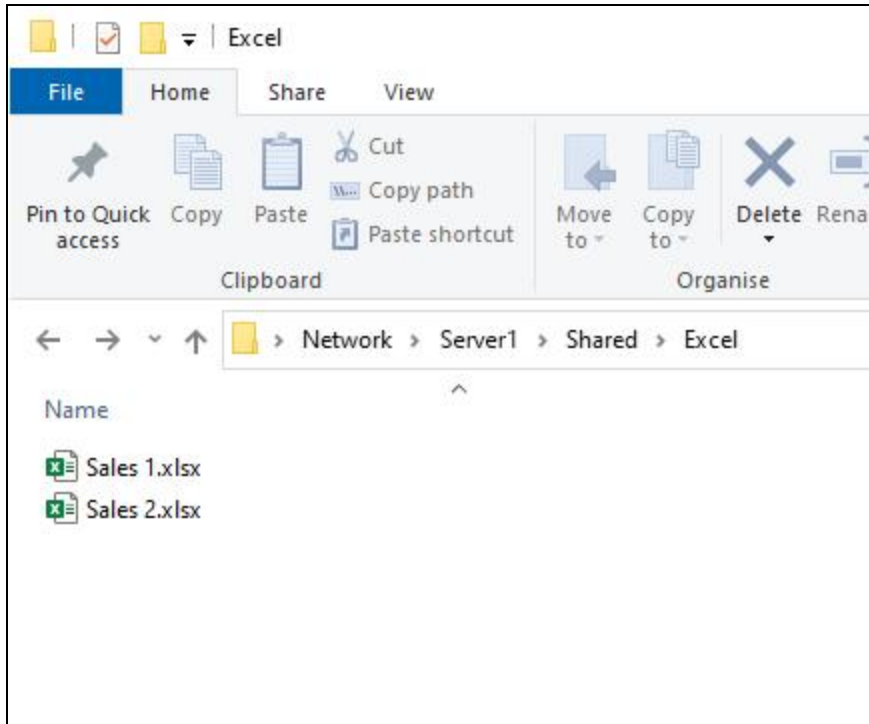
Description

Data Type

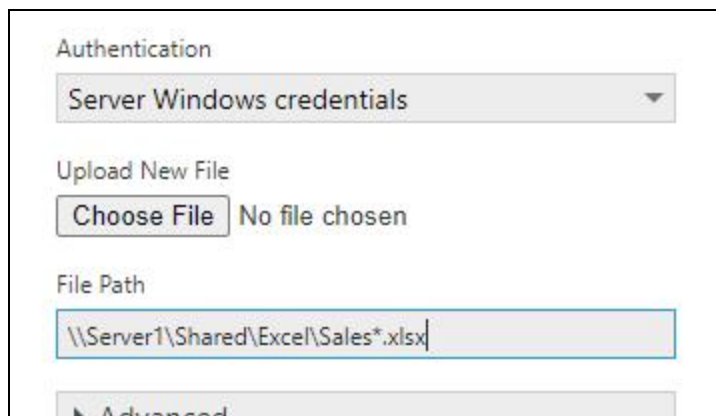
Read Multiple Files

To read data from multiple files located in the same folder together, specify the path using a wildcard character as a filename. The matching Excel files in the folder should contain the same table structure and sheet name, and their data will be combined into one data connector.

For example, the folder below contains 2 Excel files with the same structure:



In the **File Path**, specify the path using an asterisk (*) as a wildcard character in the filename:

A screenshot of the Logi Symphony v24 file upload interface. It features a section titled "Authentication" with a dropdown menu currently set to "Server Windows credentials". Below this is an "Upload New File" section containing a "Choose File" button and the text "No file chosen". Underneath is a "File Path" section with a text input field containing the path "\\Server1\\Shared\\Excel\\Sales*.xlsx". At the bottom, there is a partially visible "Advanced" section with a right-pointing arrow.

The data from multiple files is then combined into a single set of sheets/tables and columns for you to work with.

A *File Name* column is included in the structure of the resulting tables, and you can choose whether to include or exclude this in your [metric sets](#):

'File Name	Location	Sales
\\server1\shared\excel\Sales 1.xlsx	Beijing	5,000.00
	California	5,500.00
	Ontario	3,000.00
	Quebec	2,500.00
	Shanghai	1,500.00
	Texas	6,000.00
	(All)	23,500.00
\\server1\shared\excel\Sales 2.xlsx	Beijing	3,500.00
	California	6,300.00
	Narita	8,000.00
	Ontario	9,500.00
	Quebec	1,800.00
	Shanghai	2,400.00
	Texas	4,500.00
	Tokyo	3,000.00
	(All)	39,000.00
Grand Total		62,500.00

My Project

Data Connectors

Shared

Excel

[Sheet1\$]

Location

Sales

'File Name'

'File Created Time'

'File Modified Time'

Data Cubes

Hierarchies

Time Dimensions

Metric Sets

Dashboards

Reports

Scorecards

Small Multiples

Slideshows

Images

Maps

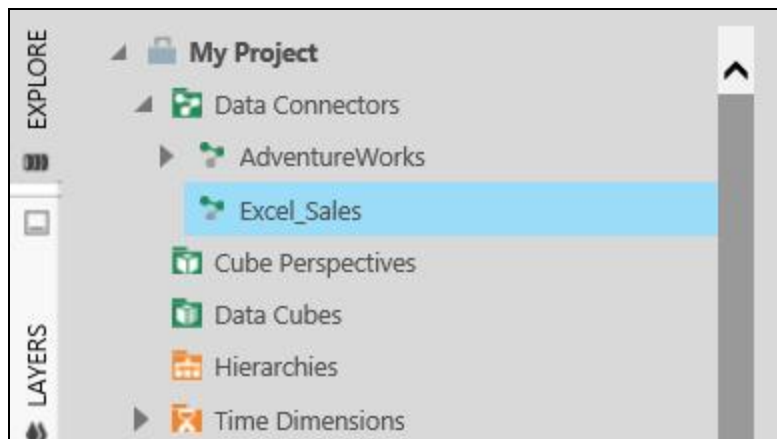
Excel Connection Issues

This applies to: *Managed Dashboards, Managed Reports*

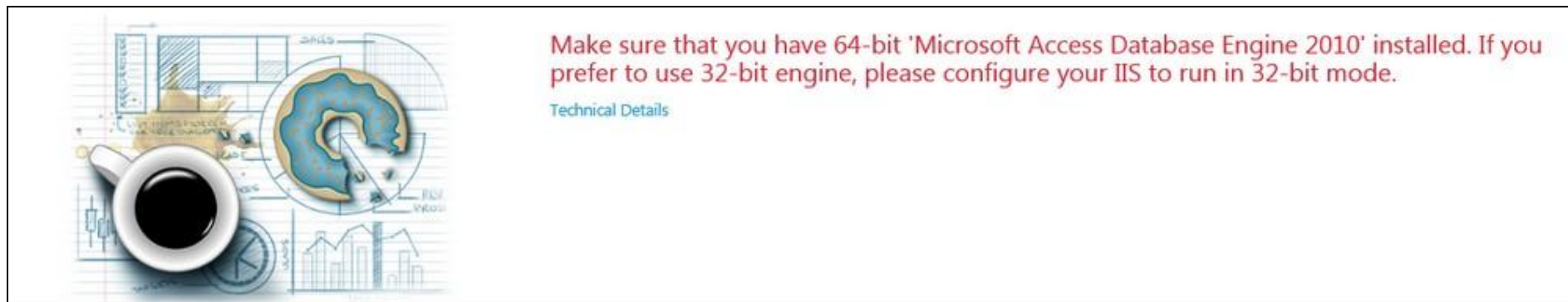
Issue: Error Occurs When Connecting to Excel File

Symptoms:

- Unable to discover table structure.



- You get the error below when you drag and drop the excel file on the dashboard: *Make sure that you have 64-bit 'Microsoft Access Database Engine 2010' installed.*



Resolution:



- Archive of documentation for Logi Symphony v24

1. Install the [64-bit Microsoft Access Database Engine 2010](#) on the server. This can also be [installed automatically](#) in the prerequisites screen when [deploying an instance](#).



Converting a String to Date/Time Data Type

This applies to: *Managed Dashboards, Managed Reports*

This article shows you how to change the data type of a column to Date/Time in an Excel or flat file data connector. With a date/time data type, you can use a [time dimension](#), customize the [format](#), and more.

Connect to a Flat File or Excel File

To import a flat file or an Excel file, follow the steps in [Drag and Drop an Excel File](#). You can also choose to create a data connector yourself for an [Excel file](#) or [flat file](#) instead.

After creating the data connector, you can drag a sheet or table onto a metric set or dashboard to view it.

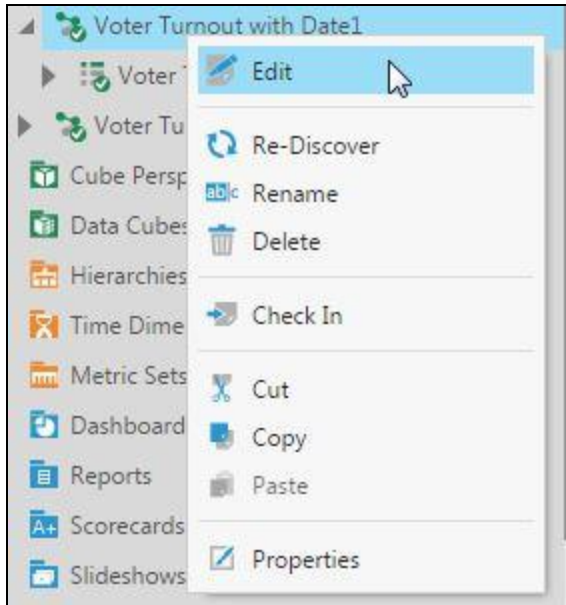
Date	Value	Category
20,110,101.00	627.43	A
20,110,201.00	384.76	A
20,110,301.00	186.86	A
20,110,401.00	756.87	A
20,110,501.00	242.58	B
20,110,601.00	975.21	B
20,110,701.00	391.91	B
20,110,801.00	395.13	B
20,110,901.00	617.04	C
20,111,001.00	580.72	C
20,111,101.00	561.04	C
20,111,201.00	213.93	C
20,110,101.00	627.43	A

In the example above, the date column was actually entered into Excel as a number containing a year, month, and day, so a column of numbers was imported into Symphony. It is also common for a column of dates to be entered as text in Excel and imported into Symphony as text (the *String* data type), which can't be reformatted or used with a time dimension.

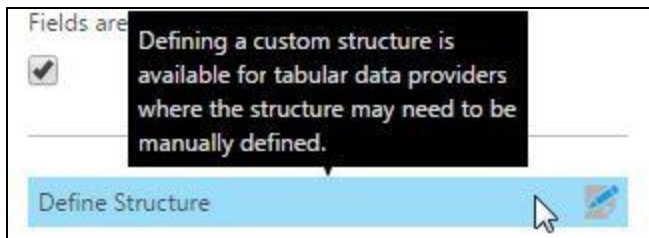
Setting Up the Date/Time Data Type

As an alternative to converting the values into dates in Excel, the data connector allows you to customize the structure of the imported data including each column's data type.

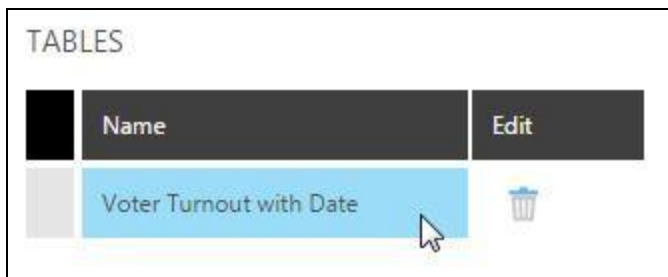
Right-click the data connector created for the Excel file and select **Edit**.



Select **Define structure** near the bottom of the dialog.



Select the table name or sheet with the column you want to edit.



Select the column you want to edit. If the columns are not shown, select **Re-discover table**.

COLUMNS

	Name	Edit
	Date	
	Value	
	Category	

Under the selected column, set **Data Type** to *Date/Time*.

COLUMN DETAILS

Primary key
☐

Skipped

String

Double

Currency

Decimal

Boolean

Binary

GUID

Date/Time

Byte

None

Double

Once the data type has been selected, the **Date Format** field appears, where you can enter the format that matches the dates in your column so that each of its components (e.g., year, month, and day) are imported correctly. This format can be set the same way as formats elsewhere in Symphony, including [time dimensions](#).

Data Format

Select the submit button at the bottom of the dialog to save the changed information.

This converts the data into a date format, which allows you to use time dimensions, customize the format, and more.

Date	Value	Category
01/01/2011 00:00:00	627.43	A
02/01/2011 00:00:00	384.76	A
03/01/2011 00:00:00	186.86	A
04/01/2011 00:00:00	756.87	A
05/01/2011 00:00:00	242.58	B
06/01/2011 00:00:00	975.21	B
07/01/2011 00:00:00	391.91	B
08/01/2011 00:00:00	395.13	B
09/01/2011 00:00:00	617.04	C
10/01/2011 00:00:00	580.72	C
11/01/2011 00:00:00	561.04	C



Manage File Uploads

Jump to: [Connecting to Flat Files in Managed Dashboards](#).

This applies to: *Visual Data Discovery*

Symphony can visualize data from file uploads including CSV, JSON, and TSV files.

- The maximum supported file size is 500 MB
- Data from the file upload is stored in a PostgreSQL database
- When you upload a flat data file, the first 1,000 records are used to determine if fields are imported as NUMBER or INTEGER.
 - If there are no decimal number records in the first 1,000 records, the numeric fields are imported as INTEGER instead of NUMBER: any decimal number records after row 1,000 may not upload fully.
 - To ensure all records are imported, sort your data to ensure decimal numbers are included in the first 1,000 records.

Before you can establish a connection from Symphony to your file uploads storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions.

After the connector has been set up, create a data source configuration and upload your file or files to that source. See:

- [Define A Source](#)[Define A Visual Data Discovery Source](#)
- [Upload A New File In Visual Data Discovery](#)
- [Edit An Existing File In Visual Data Discovery](#)
- [Delete a File](#)
- [API Endpoints](#)

Upload a New File in Visual Data Discovery

1. Log in as a user with the **Administer Sources** or **Create New Data Sources** [privilege](#).
2. [Create](#) or [edit](#) an existing data source.

3. Select **Add** to add a new data entity, then select **From File**.

^ Data Entity Definition
Unsaved

Data Entities
Add

Third Party Sales
JV Sales

Add more Entities
to be able to create Joins

Data Entity Details
Cancel
Apply

Data Entity Name*
Third Party Sales

Select File*
Select file
Upload New File

Available Fields
Preview

API Endpoints
Edit File

No Fields Available
No Preview Available

4. Add a unique Data Entity Name, then select **Upload New File**. The File Upload work area opens.

File Upload

File Details

Display Name*

Joint Venture Sales

Description

Add description (500 characters max.)

Preview

Data Details

Choose File*

joint-venture-final-Q2-2023.csv

Browse

Single Quote Char.

"

Field Delimiter

,

No. of records to display

10

Max. 1,000 records allowed

☒

Column Headers in first row

Preview

Upload Settings

NOTE: These are what the upload settings are.

☐

Use Only File Structure

☐

Disable Integer to Time Auto Detection

Cancel

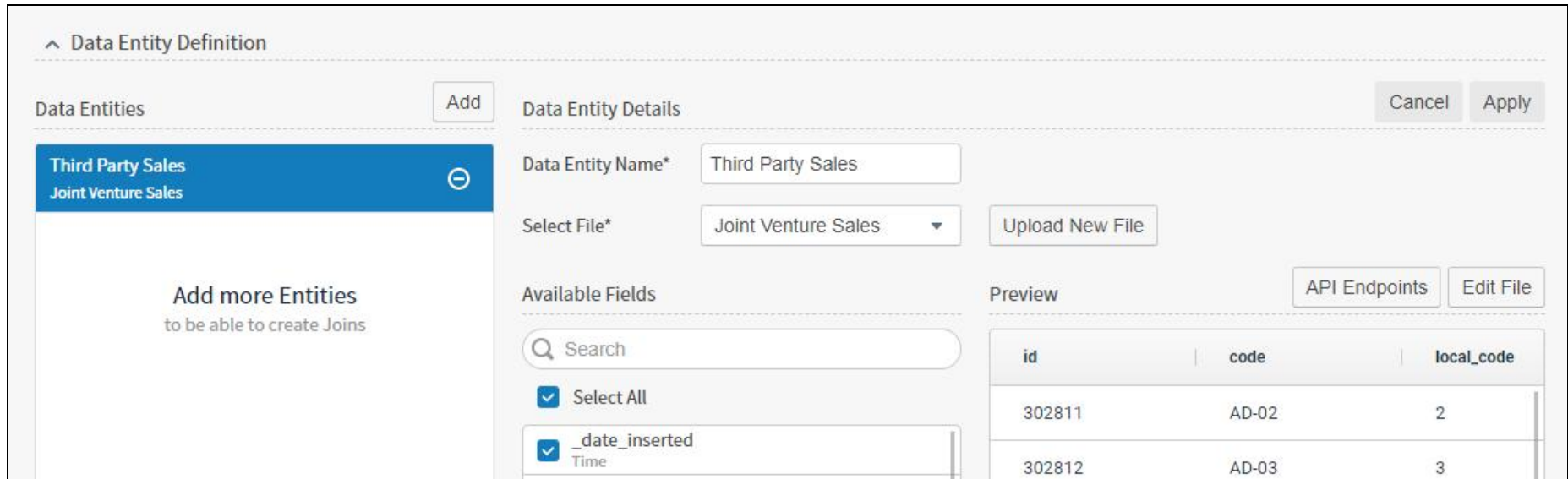
Save

- Enter File Details, such as a unique **Display Name**, and optional **Description**.
- Use the **Browse** button to select a file to upload.
- After you have selected a file, Symphony may autofill the **Single Quote Char.** and Field **Delimiter** fields. Adjust if needed.

8. If needed, change the **No. of records to display** from 10 to up to 1,000 records.
9. Enable or disable the checkbox **Column Headers** in first row to match your file layout. If no column headers are in your data, Symphony assigns numerical column headings, **field_1**, **field_2**, and so on.
10. Optionally, select **Preview** to preview your data.
11. Enable the checkbox **Use Only File Structure** to create the file using only the existing file structure, no data.
12. Enable the checkbox **Disable Integer to Time Auto Detection** to prevent auto detection of time fields.
13. Select **Save** to close the File Upload work area and continue creating or updating your data entity for this source.

Edit an Existing File in Visual Data Discovery

1. Log in as a user with the **Administer Sources** or **Create New Data Sources** [privilege](#).
2. [Edit](#) an existing data source.



Data Entity Definition

Data Entities Add

Third Party Sales
Joint Venture Sales

Add more Entities
to be able to create Joins

Data Entity Details Cancel Apply

Data Entity Name* Third Party Sales

Select File* Joint Venture Sales Upload New File

Available Fields

Search

☒ Select All

☒ _date_inserted
Time

Preview API Endpoints Edit File

id	code	local_code
302811	AD-02	2
302812	AD-03	3

3. Select the data entity with the file you want to edit, then select **Edit File**. The File Upload work area opens.



4. **Browse** for a new file.

- i. If you are replacing the existing file, your new file must use the same data file structure as the existing file. Enable the **Replace** checkbox in Upload Settings: previous data is replaced.
- ii. If you are adding data to the existing file, your new file must use the same data file structure as the existing file. Disable the **Replace** checkbox in Upload Settings: previous data is appended with new rows of data.

File Upload

File Details

Display Name*

Joint Venture Sales

Description

Add description (500 characters max.)

Data Details

Choose File*

Choose file...

Browse

Single Quote Char.

Field Delimiter

No. of records to display

10

Max. 1,000 records allowed

☒ Column Headers in first row

Preview

Upload Settings

☒ Replace

Preview

Current Data

New Data

id	code	local_code	name
302811	AD-02	2	Canillo Parish
302812	AD-03	3	Encamp Parish
302813	AD-04	4	La Massana Par...
302814	AD-05	5	Ordino Parish
302815	AD-06	6	Sant Julià de Lò...
302816	AD-07	7	Andorra la Vella...
302817	AD-08	8	Escaldes-Engor...
302818	AD-U-A	U-A	(unassigned)
302819	AE-AJ	AJ	Ajman Emirate

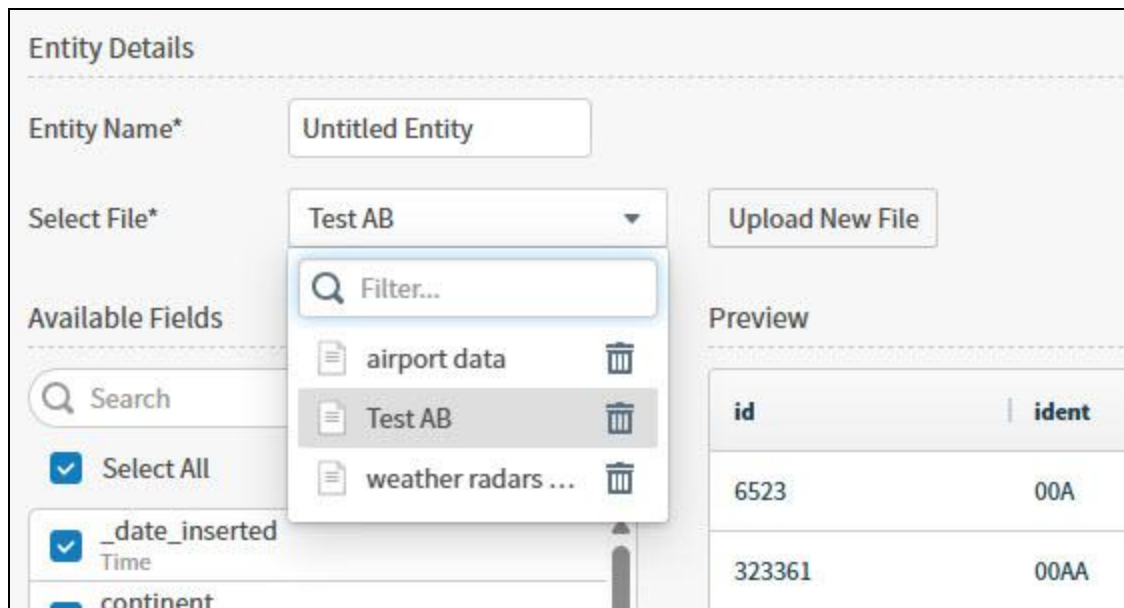
Cancel

Save

5. Select **Preview** to preview your data.
 - i. The Current Data tab shows the data of your existing file.
 - ii. The New Data shows the replaced or amended data preview.
6. Select Save to **Save** your changes or **Cancel** to discard your changes. The File Upload work area closes.

Delete a File

If you have the [privilege](#) to manage file uploads, you can delete uploaded files as needed. Select the trash can icon next to the file name in the **Select File** dropdown.



API Endpoints

1. Log in as a user with the **Administer Sources** or **Create New Data Sources** [privilege](#).
2. [Edit](#) an existing data source.

^ Data Entity Definition

Data Entities

Third Party Sales

Joint Venture Sales

Add more Entities

to be able to create Joins

Add

Data Entity Details

Data Entity Name*

Third Party Sales

Select File*

Joint Venture Sales

Upload New File

Available Fields

Search

☒ Select All

☒ _date_inserted
Time

Preview

API Endpoints

Edit File

id	code	local_code
302811	AD-02	2
302812	AD-03	3

Cancel

Apply

3. Select the data entity with the file you want to edit, then select **API Endpoints**. The API Endpoints dialog box opens.
The dialog offers convenient example cURL requests but the APIs can be leveraged from your preferred development platform.
4. Copy and modify the example cURL requests to include your own Symphony credentials, replacing the placeholders for username and password. Select **Close** to close the dialog.

API Endpoints

×

Append additional data to file upload

Request Body

multipart/form-data

```
curl -v --user username:password 'http://127.0.0.1/composer/api/uploads/62a3831bd
a' -X POST \
  -H 'Content-Type: multipart/form-data' \
  -F "fileData=@data.csv" \
  -F "delimiter=," \
  -F "includesHeader=true" --insecure
```

Copy to Clipboard

Replace data in file upload

Request Body

multipart/form-data

```
curl -v --user username:password 'http://127.0.0.1/composer/api/uploads/62a3831bd
a' -X PUT \
  -H 'Content-Type: multipart/form-data' \
  -F "fileData=@data.csv" \
  -F "delimiter=," \
  -F "includesHeader=true" --insecure
```

Delete data from file upload

Request Body

```
curl -v --user username:password 'http://127.0.0.1/composer/api/uploads/62a3831bd
a' -X DELETE \
```

Close



Work with the Upload API

There are two operations that can be performed using the Upload API: appending additional data and clearing previously uploaded data. The source creation page offers convenient example cURL requests but the APIs can be leveraged from your preferred development platform. Select API Endpoints on the [source creation tab](#) to edit your data.

Modify the example cURL requests to include your own Symphony credentials, replacing the placeholders for username and password.

```
curl -v --user <username>:<password> <YourServer>
```

Example: Append Data

In the following example, the Upload API accepts an array of JSON objects. Note that the object field types must match those used to create the Upload API source originally. For example, if the value of the *price* field is a number, you can not upload new rows in which the value of the *price* field is a string.

```
curl -v --user <username>:<password> 'https://<Your_Composer_Server>/ composer/api/upload/<YourDataSourceId>' -X POST -H "Content-Type: application/vnd.composer.v3+json" -d '[{"price":100.5,"venue_id":"V678","venue_name": "Pizza Barn"}]' --insecure
```

Example: Clear Previously Uploaded Data

In the example below, the Upload API will clear all previously uploaded data from the data source with the ID of <YourDataSourceId>.

```
curl -v --user <username>:<password> 'https://<Your_Symphony_Server>/ api/upload/<YourDataSourceId>' -X DELETE --insecure
```

Feature Support

File upload support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y

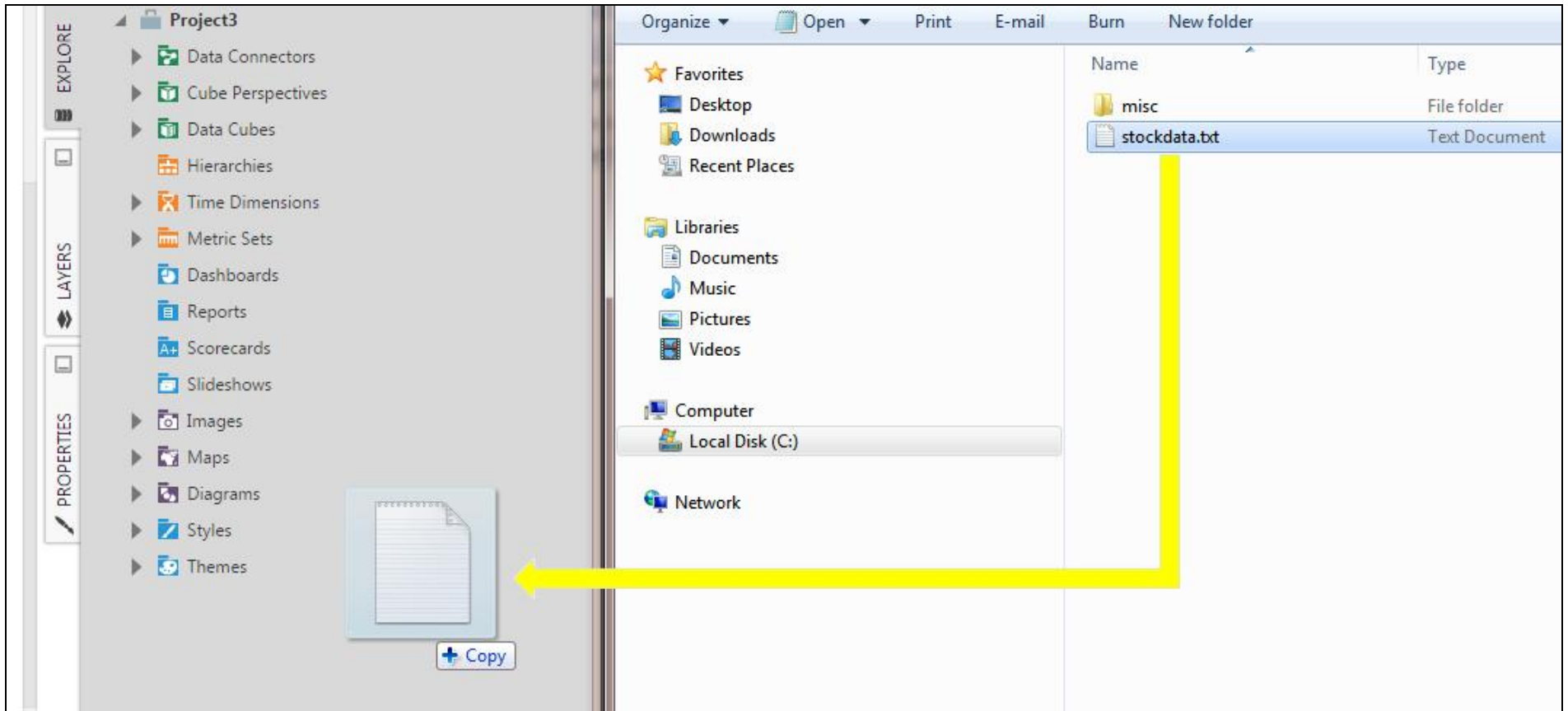
Feature	Supported?
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A
Nested Fields	N/A
Partitions	N
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y

Connecting to Flat Files in Managed Dashboards

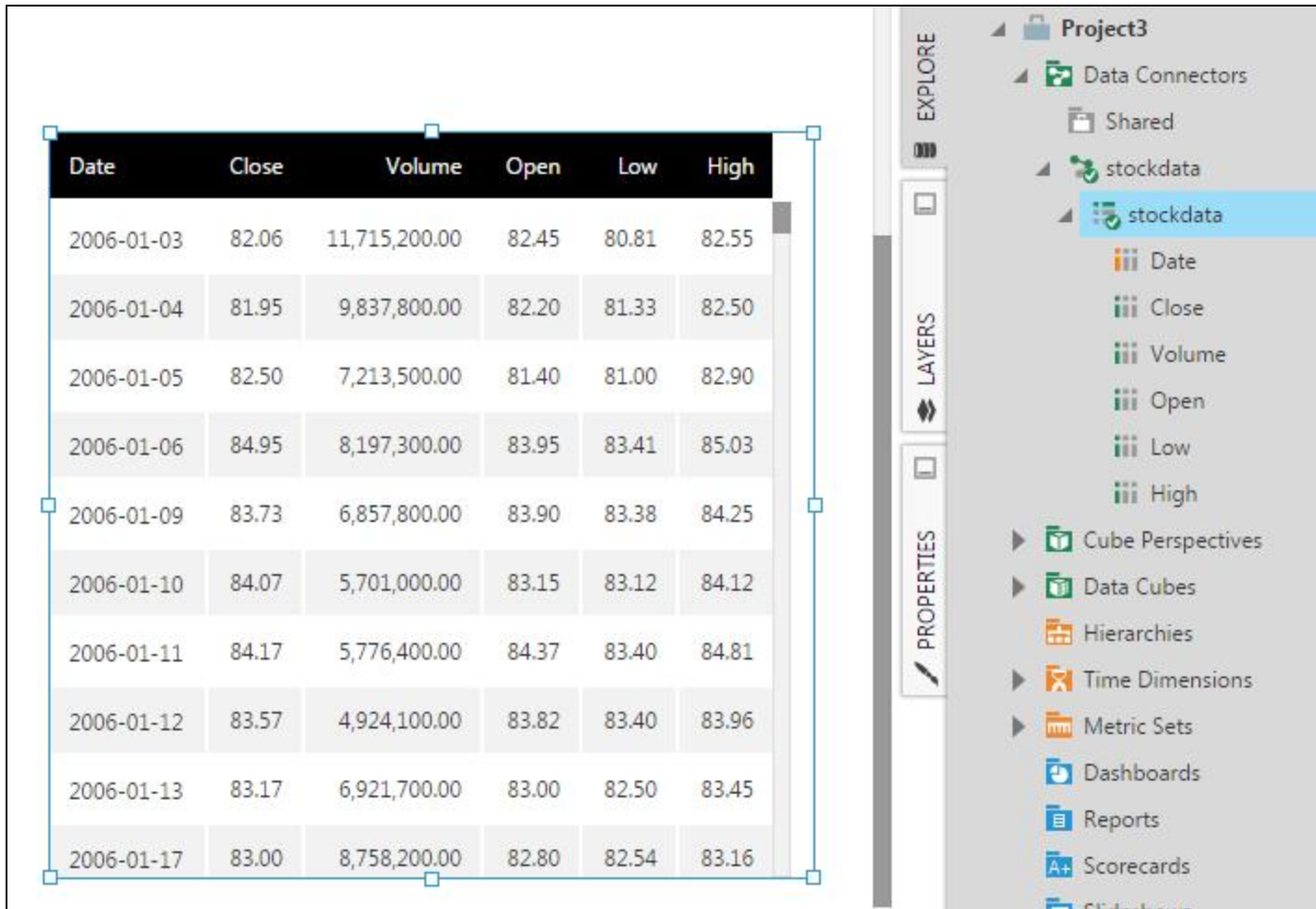
This applies to: *Managed Dashboards, Managed Reports*

Drag and Drop a Flat File

Just like [with Excel files](#), you can drag a CSV or other text file from Windows Explorer or Finder and drop it onto the Symphony Explore window or the dashboard canvas.



This will automatically import the flat file data to Symphony and create a corresponding data connector.



The screenshot displays the Logi Symphony v24 interface. On the left, a data table is shown with columns: Date, Close, Volume, Open, Low, and High. The table contains 12 rows of stock price data for January 2006. On the right, a sidebar is visible with the following sections:

- EXPLORE**: Contains a tree view of the project structure.
 - Project3
 - Data Connectors
 - Shared
 - stockdata
 - stockdata (selected)
 - Date
 - Close
 - Volume
 - Open
 - Low
 - High
 - Cube Perspectives
 - Data Cubes
 - Hierarchies
 - Time Dimensions
 - Metric Sets
 - Dashboards
 - Reports
 - Scorecards
 - Slideboards
- LAYERS**: Contains a list of layers.
- PROPERTIES**: Contains a list of properties.

Connect to a CSV File

As an alternative to dragging and dropping as shown above, the following walkthrough shows you how to manually create a data connector for a text file which contains comma-delimited stock price data.

```
Date,Close,Volume,Open,Low,High
2006-01-03,82.06,11715200,82.45,80.81,82.55
```



```
2006-01-04,81.95,9837800,82.2,81.33,82.5
2006-01-05,82.5,7213500,81.4,80.999,82.9
2006-01-06,84.95,8197300,83.95,83.41,85.03
2006-01-09,83.73,6857800,83.9,83.38,84.25
2006-01-10,84.07,5701000,83.15,83.12,84.12
2006-01-11,84.17,5776400,84.37,83.4,84.81
2006-01-12,83.57,4924100,83.82,83.4,83.96
2006-01-13,83.17,6921700,83,82.5,83.45
...
```

To begin, go to the main menu, select **New**, and then select **Data Connector**.

In the *New Data Connector* dialog, click inside the **Name** box, and enter a name for your data connector.

Select the **Data Provider** drop-down and choose *Flat Files*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Flat Files

Test connection 

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials

Upload New File

Choose File

No file chosen

Text File

First Line Is Header

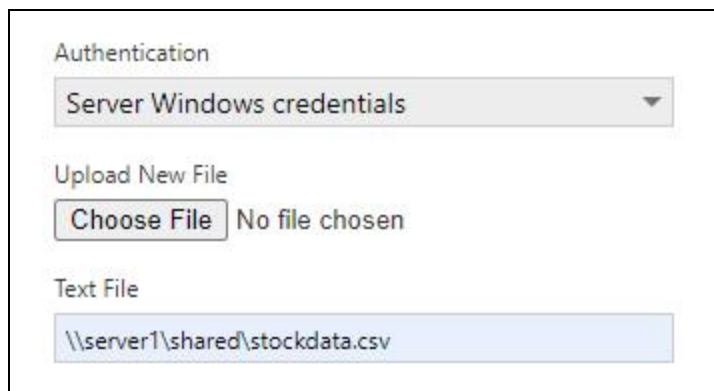
☒

► Advanced

Define structure 

Next, specify the CSV file using one of two options:

- Select **Choose File** and use the file selector to select the CSV file to be imported. Note that changes to the original file will no longer affect the generated data connector.
- Or, use the **Text File** field to specify the full network path or web address to the file (e.g., `\\server1\shared\stockdata.csv`). Note that changes to the original file will affect the data once the data connector gets refreshed. Use the **Authentication** setting above to change how Symphony should access the file if access is restricted.



The screenshot shows a configuration window with the following elements:

- Authentication:** A dropdown menu currently set to "Server Windows credentials".
- Upload New File:** A section containing a "Choose File" button and the text "No file chosen".
- Text File:** A text input field containing the path `\\server1\shared\stockdata.csv`.

For CSV files, the first line of data often contains the header text values. In this case, make sure the **First Line Is Header** option is checked.

If your data values are not surrounded by quotation marks, click to expand the **Advanced** section and clear **Fields Are Enclosed In Quotes**.

The **Define Structure** option lets you define the table and column names and data types, but it is recommended to just select **Submit** at the bottom of the dialog and let the auto-discovery run first. You can then go back and edit the discovered columns if needed.

Go to **Explore** and locate the newly added data connector. Expand it to see the CSV file and its discovered columns. Drag the file to the dashboard canvas to see its values displayed in a table visualization (in Raw Data format).

Data Binding Panel

Edit Bindings

MetricSet1

MEASURES

Close

Volume

Open

Low

High

click to add, or drop a measure

ROWS

Date

<Row Number>

click to add, or drop a hierarchy

SLICERS

click to add, or drop a hierarchy

COLUMNS

Date	Close	Volume	Open	Low	High
2006-01-03	82.06	11,715,200.00	82.45	80.81	82.55
2006-01-04	81.95	9,837,800.00	82.20	81.33	82.50
2006-01-05	82.50	7,213,500.00	81.40	81.00	82.90
2006-01-06	84.95	8,197,300.00	83.95	83.41	85.03
2006-01-09	83.73	6,857,800.00	83.90	83.38	84.25
2006-01-10	84.07	5,701,000.00	83.15	83.12	84.12
2006-01-11	84.17	5,776,400.00	84.37	83.40	84.81
2006-01-12	83.57	4,924,100.00	83.82	83.40	83.96
2006-01-13	83.17	6,921,700.00	83.00	82.50	83.45
2006-01-17	83.00	8,758,200.00	82.80	82.54	83.16

EXPLORE

Project3

Data Connectors

Shared

DataConnector1

stockdata

Date

Close

Volume

Open

Low

High

Cube Perspectives

Data Cubes

Hierarchies

Time Dimensions

Metric Sets

Dashboards

Reports

Scorecards

Slideshows

LAYERS

PROPERTIES



Note: An imported file will be automatically warehoused after the first use to improve performance.

Define Columns

Symphony can automatically discover the structure of the file, as well as details such as the delimiter character and culture code page when the data connector is first created. Afterwards, you can redefine these settings as needed.



- Archive of documentation for Logi Symphony v24

First, locate the flat file data connector from the main menu or from the Explore window. Right-click (or long tap) on the data connector and select **Edit** from the context menu.

The **Character Used As Delimiter** is auto-detected by default, but you can change it if necessary. If your text file is delimited by *Tab* characters, just click inside the box, delete any existing character, and then type the *Tab* key, or right-click and choose the tab option.

In the *Edit Data Connector* dialog, scroll down and select **Define structure**.

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials

Upload New File

Choose File No file chosen

Text File

Character Used As Delimiter

Culture Code Page

US-ASCII

Detect settings

First Line Is Header:

☒

Advanced

Define structure

Define Data Structure

A data structure lets you define exactly how the expected structure for a data connector will be. This applies to many tabular providers, such as web services, where the structure can't be automatically detected.

TABLES

	Name	Edit
	stockdata	

Add table +

In the *Define Data Structure* dialog, select the table and then scroll down to see the discovered columns. The columns are discovered on-demand so if you don't see any listed, select **Re-discover table**.

Add Table

TABLE DETAILS

Name

stockdata

Description

Re-discover table

COLUMNS

	Name	Edit
	Date	
	Close	
	Volume	
	Open	
	Low	
	High	

Add Column
+



- Archive of documentation for Logi Symphony v24

Select a column and then set the details for the column as needed. For example, date/time columns are discovered as string columns so you'll want to change the **data type** to Date/Time.

COLUMNS

	Name	Edit
	Date	
	Close	
	Volume	
	Open	
	Low	
	High	

Add Column 

COLUMN DETAILS

Primary Key

☐

Skipped

☐

Name

Description

Data Type

Date/Time
String
Double

Read Multiple Files

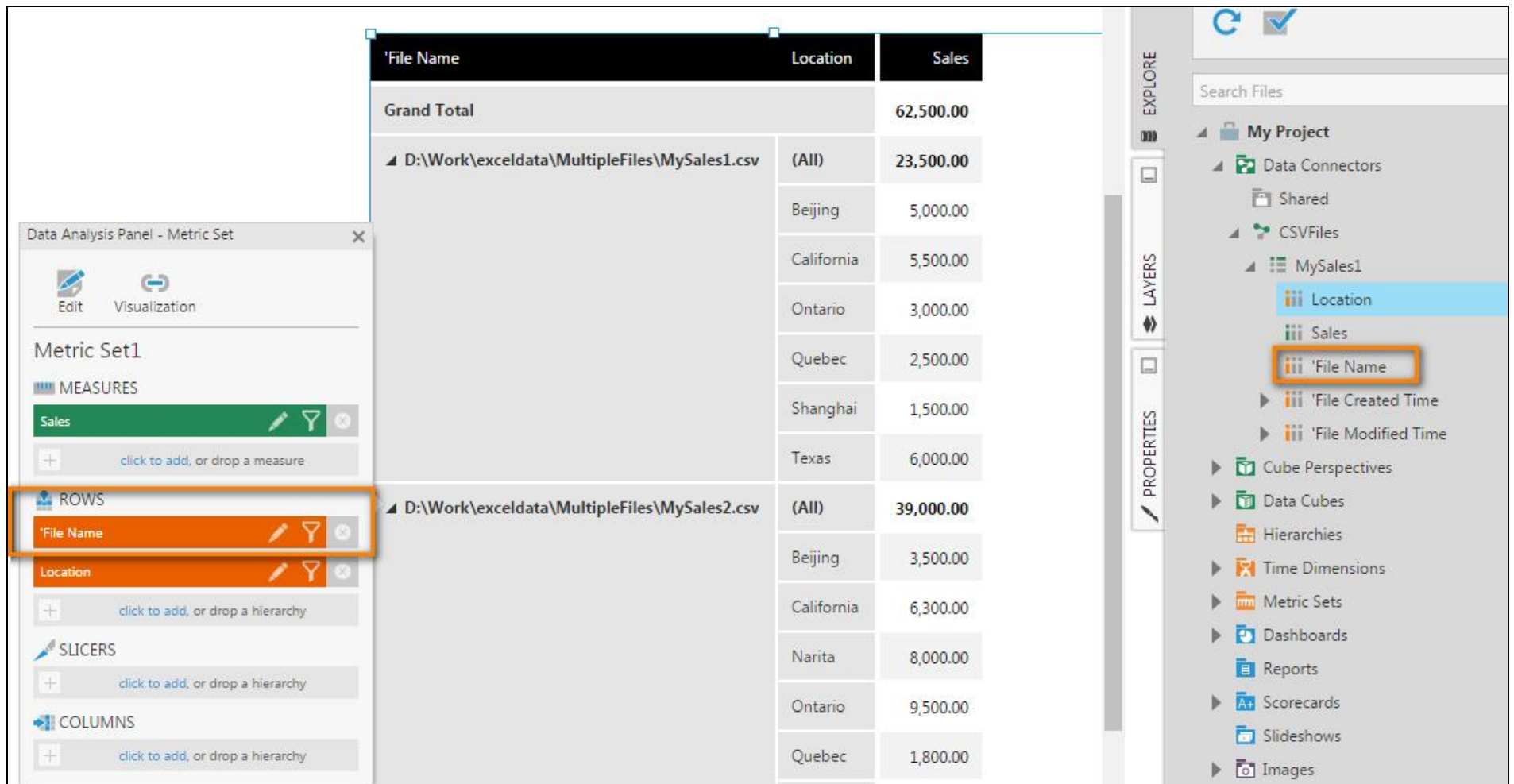
Symphony can read multiple files under the same folder. To do this, specify the path using a wildcard character as a filename. Files with the same structure will be loaded simultaneously.

For example, the folder below contains 2 CSV files with the same structure:



In the **Text File** field, specify the path using a wildcard character to represent the part of the filename that changes. For example, `\\server1\shared\*.csv`.

The data from all files will be included together, and *File Name* is one of the columns you can access:



The screenshot displays the Logi Symphony v24 interface. The central data table shows sales data categorized by file and location. On the left, the 'Data Analysis Panel - Metric Set' is open, showing 'Metric Set1' with 'Sales' as a measure and 'File Name' and 'Location' as row dimensions. On the right, the 'EXPLORE' panel shows a project structure with 'My Project' containing 'Data Connectors', 'Shared', 'CSVFiles', and 'MySales1'. The 'MySales1' folder is expanded, showing 'Location', 'Sales', and 'File Name' as dimensions, with 'File Name' highlighted by an orange box.

'File Name	Location	Sales
Grand Total		62,500.00
D:\Work\exceldata\MultipleFiles\MySales1.csv		
(All)		23,500.00
Beijing		5,000.00
California		5,500.00
Ontario		3,000.00
Quebec		2,500.00
Shanghai		1,500.00
Texas		6,000.00
D:\Work\exceldata\MultipleFiles\MySales2.csv		
(All)		39,000.00
Beijing		3,500.00
California		6,300.00
Narita		8,000.00
Ontario		9,500.00
Quebec		1,800.00

For more information, see:

- [Drag and Drop an Excel File](#)
- [Connecting to Excel](#)



- Archive of documentation for Logi Symphony v24

- [Connect to Data and View it on a Dashboard](#)
- [Flat File Connection Issues](#)

Flat File Connection Issues

This applies to: *Managed Dashboards, Managed Reports*

Issue: 404 Not Found Error Occurs When Drag and Drop Flat File

Symptoms:

- You get a 404 Not Found error when drag and drop a CSV or text or Excel file from Windows Explorer to the Explore window.
- You get a 404 Not Found error when you manually create a data connector using the Flat File provider option and then go to select the flat file (CSV or other).

Resolution:

This problem may occur if your flat file exceeds the default upload file size limit which is around 500 MB. You can increase this limit by editing the following file from your Symphony website:

```
www\BIWebsite\Upload\Web.config
```

Increase the **maxAllowedContentLength** value which is measured in bytes. The maximum value you can enter is 4294967295.



- Archive of documentation for Logi Symphony v24

Connecting to Generic Web Data Sources

This applies to: *Managed Dashboards, Managed Reports*

This article describes how you can use the Generic Web data provider to connect to various online data sources such as web applications and sites offering REST API services.

Set Up the Data Connector

[Create a new data connector](#) and set the **Data Provider** drop-down to *Generic Web*.

more help

New Data Connector

A data connector lets you connect to your data through a provider.

Name
Data Connectors Root Folder/Twitter
[Select a name...](#)

Data Provider
Generic Web

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider.
This will help us connect to your data properly.

URL
`https://api.twitter.com/2/users/2244994945/tweets`

User Name

Secret

Connection Script

```
1 connection.Authorization = "Bearer "
```



Fill in the **URL** setting to the address of the online data source, or the URL to an API method you want to access.

The **User Name** and **Secret** fields are optional. You can set these and access their values in script if needed rather than writing them directly in the script.

Enter at least a **Get Page Script**. Depending on your data source, different script written in [DundasScript](#) may be required to authenticate and access the data, and you can find several samples in the [examples section](#) below. Your script has access to the following objects:

- *connection* – defines connection information in the [Connection Script](#) and creates a request in the [Get Page Script](#).
- *parameters* – defines optional [parameters](#) you can expose to users of the data connector and refer to in your script.
- *session* – the [current logon session](#) of the user when the script runs.

And these classes in addition to the ones you can access [in any DundasScript](#):

- [ConversionHelper](#) – helper methods for converting and manipulating request and response data.
- [HttpUtility](#) – provides methods for encoding and decoding URLs when processing Web requests.
- [Request](#) – executes HTTP requests to an online service.
- [Response](#) – the response returned by a request.

Connection Script

You can enter a **Connection Script** if connections to your data source require an [authorization header](#), or if you want to set up any initial values to use later in the Get Page Script. This script is otherwise optional.

Connection Properties

Your script can access the *connection* object, which has the following properties. The first two can optionally be customized, and all properties can be read later from your Get Page Script:

Property	Type	Description
<i>Authorization</i>	string	Gets or sets the Authorization header value.
<i>Data</i>	IDictionary<string,object>	Gets a dictionary that can be used to store any information which is needed for subsequent requests using this connection.
<i>Secret</i>	string	Gets the value of the Secret setting of the data connector.

Property	Type	Description
<i>Settings</i>	IDictionary<Guid,object>	Gets all of the data connector's setting values (including any without dedicated properties already listed) keyed by data connector property ID .
<i>Url</i>	string	Gets the URL setting of the data connector.
<i>UserName</i>	string	Gets the User Name setting of the data connector.

Get Page Script

The **Get Page Script** is required but can be very simple if it returns all of its data at once, or more complicated when needed to retrieve a large amount of data in separate requests as 'pages' containing portions of the complete result.

This script must return a [Response](#) object you received to a [Request](#) made to your data source or service.

CreateRequest Method

First, call the **connection.CreateRequest** method on the *connection* object to get a Request populated with whatever information you provided so far.

```
CreateRequest()
```

Returns	Type	Description
Returns:	Request	An object that will send an HTTP request using the <i>connection</i> information.

Example:

```
var request = connection.CreateRequest();
// or
var request = new Request(); // blank request - needs properties set
```

Alternatively, you can create a new blank Request as shown in the last line above, and then populate its properties yourself.

Request Properties

The **Request** type object has the following properties, which can be customized as needed:

Property	Type	Description
<i>Headers</i>	IDictionary<string,string>	Gets a dictionary defining the HTTP request headers to be sent to the request URI. By default

Property	Type	Description
		this contains an <i>Authorization</i> header if it was set on the connection object.
<i>Uri</i>	string	Gets or sets the URI (URL) where the request will be sent.
<i>TimeoutSeconds</i>	int	Gets or sets the maximum number of seconds to allow for receiving the response before canceling the request. Default: <i>100</i>

Call one of the following two methods to get a Response depending on which type of HTTP request to send.

ExecuteGet Method

The **Request.ExecuteGet** method performs an [HTTP GET method](#) request (the most common type of web request).

```
ExecuteGet()
```

Returns	Type	Description
Returns:	Response	The response to the HTTP GET request that was sent. (Your script will wait for the response before it continues.)

Example:

```
var response = request.ExecuteGet();
```

ExecutePost Method

The **Request.ExecutePost** method performs an [HTTP POST method request](#), if the API method you are calling is a POST method.

```
ExecutePost(string body, string encoding = "utf-8", string mediaType = "text/plain")
```

Parameter	Type	Description
<i>body</i>	string	The body of the request that the POST method you are calling is expecting as data.
<i>encoding</i>	string	(<i>optional</i>) The name of a specific text encoding to use in the request body. Default: <i>utf-8</i>

Parameter	Type	Description
<i>mediaType</i>	string	(optional) The media type of the request body. Default: <i>text/plain</i>
Returns:	Response	The response to the HTTP POST request that was sent. (Your script will wait for the response before it continues.)

Example:

```
var body = @"[
{
  ""objectId"":""de1a699b-793a-45ee-bdf2-fbab59edfe96"",
  ""clientId"":"" + Guid.NewGuid() + @""
}
]";
var response = request.ExecutePost(body, "utf-8", "application/json");
```



Note: The example above is defining JSON using a [verbatim string literal](#) so that it can span multiple lines. These string literals use pairs of quotation marks (quote escape sequence) to insert a literal quotation mark into the JSON.

Response Properties

Once you have the **Response** type object, you can optionally read or customize its properties as follows before returning it:

Property	Type	Description
<i>Content</i>	string	Gets or sets the response content. Default: the body of the response returned for your request.
<i>Headers</i>	IDictionary<string,string>	Gets a dictionary defining the HTTP response headers returned in response to your request.
<i>IsLastPage</i>	bool	Gets or sets a true/false value indicating whether this is the last page of data. This defaults to <i>true</i> - change to <i>false</i> if the Get Page Script should run again to get more data.
<i>StatusCode</i>	HttpStatusCode	Gets the HTTP status code returned in response to your request. This is commonly <i>HttpStatusCode.OK</i> .

If *IsLastPage* is changed to *false*, the script will run again to get more data. You should keep track of which data to request next using *connection.Data*.

The last line of script should return the response. Example:

```
return response;
```



Define Parameters Script

If you want your data connector to expose parameters so users can customize values provided to your script, expand the **Advanced** section and set the **Define Parameters Script**.

You can call the following method on the *parameters* object:

```
Add(string name, string dataTypeName, object defaultValue)
```

Parameter	Type	Description
<i>name</i>	string	A name to identify this parameter.
<i>dataTypeName</i>	string	The parameter data type , one of: <i>DateTime</i> , <i>bool</i> , <i>string</i> , <i>double</i> , or <i>int</i> .
<i>defaultValue</i>	object	The default value of the parameter if not changed elsewhere. This value must be of the type specified in <i>dataTypeName</i> .

Example:

```
parameters.Add("From", "int", 0);
```

With a parameter added, you can access *parameters* in your other scripts as a dictionary ([IDictionary<>](#)). For example:

```
int from = parameters["From"];  
parameters["From"] += 10;
```

Users with access to this data connector can make use of these parameters by dragging the data under it in the Explore window onto a [data cube](#) while editing. This adds the data as a [Tabular Select](#), and you can then [configure these parameters](#) to customize their values, connect them to [bridge parameters](#), or make them public to [connect filters](#) directly to them on a dashboard or other view.

Cleanup Script

In the **Advanced** section, you can optionally add a **Cleanup Script** that will run after the Get Page Script is finished running or if data retrieval otherwise stops. You can make another request to the service you're using, for example, if you need to let it know you're finished.

Examples

Basic Example

Some online data sources or APIs may be available without any special authentication, headers, or posted content, and can simply be accessed directly via URL.

The following **Get Page Script** accesses a public web data source from the address set in the **URL** setting of the data connector.

```
var request = connection.CreateRequest();
var response = request.ExecuteGet();
return response;
```

Symphony REST example

Symphony has its own [REST API](#), which you can access like other REST API services.

For this example, set the **URL** to `<symphony-url>/API/Account/Query` to call the [/Account/Query POST method](#). Replace `<symphony-url>` with the base URL you usually use to access Symphony (you can use `localhost` to refer to the server where the `<symphony-url>` instance you're using is running, e.g., `http://localhost:8000/`).

This **Connection Script** accesses `session` to set the request's Authorization header to the current session ID of whichever user is accessing data. It also sets up an initial page number value stored in the `Data` property:

```
connection.Data["pageNumber"] = 1;
connection.Authorization = "Bearer " + session.Id.ToString();
```

This **Get Page Script** gets pages of up to 50 accounts at a time, keeping track of progress by updating the `pageNumber` data value set above:

```
var request = connection.CreateRequest();
int pageNumber = connection.Data["pageNumber"];
string postData = @"{{
  ""queryAccountsOptions"": {{
    ""pageNumber"": {0},
    ""pageSize"":50
  }}
}}"; // "{{" & "}}" are literal braces for string.Format
postData = string.Format(postData, pageNumber);

var response = request.ExecutePost(postData, "utf-8", "application/json");
response.IsLastPage = response.Content.EndsWith("[]");
```

```
connection.Data["pageNumber"] = pageNumber + 1;

return response;
```

The *IsLastPage* property is set to true when no more accounts are returned.

OData Example

This example connects to an OData data source as an example (OData is a standard that you can connect to using the dedicated [OData data provider](#)).

The **URL** is set to *https://services.odata.org/V4/OData/OData.svc/Products* for this example.

The **Connection Script** sets up an initial value for the *\$skip* query string parameter to include in the request:

```
connection.Data["$skip"] = 0;
```

The **Get Page Script** gets two items at a time, filtered by the range of IDs defined by two parameters p0 and p1.

It also uses [HttpUtility](#) to encode text to be compatible in a URL's query string, and returns only the contents of the root element's *value* property using the [GetJsonValue ConversionHelper method](#):

```
var request = new Request();
request.Uri = connection.Url + "?$top=2&$skip=" + connection.Data["$skip"];
string filter = string.Format("ID ge {0} and ID le {1}", parameters["p0"], parameters["p1"]);
request.Uri += "&$filter=" + HttpUtility.UrlEncode(filter);

var response = request.ExecuteGet();
response.IsLastPage = ConversionHelper.GetJsonValue(response.Content, "$.value[1]") == null;
response.Content = ConversionHelper.GetJsonValue(response.Content, "$.value");
connection.Data["$skip"] += 2;

return response;
```

The **Define Parameters Script** adds the two parameters referred to above, which also allows them to be used in a data cube:

```
parameters.Add("p0", "int", 1);
parameters.Add("p1", "int", 10)
```

Advanced Example

This example demonstrates a number of different operations an API might require you to perform in a more advanced case.

The **URL** setting can be set like the following to include placeholders, which you can replace in script by calling [string.Format](#) as shown below:

```
https://{0}.example.com/API/v3/data/{1}/export/
```

The following **Get Page Script** requests a potentially lengthy export process to start, polls its progress via additional requests, and when complete downloads the content to return in a final request. An *X-API-KEY* header is set in the requests as an example for authentication used by some APIs. The HTTP status codes and other response information is checked at different points before proceeding, and custom exceptions thrown in case of failure to be displayed to users or logged.

```
string baseUri = string.Format(connection.Url, parameters["DataCenter"], parameters["ID"]);
Request request = new Request();
request.Headers["X-API-KEY"] = connection.Secret;
request.Uri = baseUri;
string exportBody = @"{
  ""format"": ""json""
}";

// Check that the initial export request is OK, otherwise display an error
Response exportResponse = request.ExecutePost(exportBody, "utf-8", "application/json");
if (exportResponse.StatusCode != HttpStatusCode.OK) {
  throw new Exception("Export status: " + exportResponse.StatusCode.ToString());
}

string status = ConversionHelper.GetJsonValue(exportResponse.Content, "$.result.status");
string progressId = ConversionHelper.GetJsonValue(exportResponse.Content, "$.result.progressId");
status = status.Replace("\"", "");
progressId = progressId.Replace("\"", "");

// Poll for export progress while still in progress
while (status == "InProgress") {
  request.Uri = baseUri + progressId;
  Response progressResponse = request.ExecuteGet();
  status = ConversionHelper.GetJsonValue(progressResponse.Content, "$.result.status");
  status = status.Replace("\"", "");
}

// Check that export succeeded with a file ID
string fileId = ConversionHelper.GetJsonValue(progressResponse.Content, "$.result.fileId");
if (status == null || status != "complete" || fileId == null) {
  throw new Exception("Progress status: " + status);
}
```

```
}  
  
// Return file contents  
fileId = fileId.Replace("\"", "");  
request.Uri = baseUri + fileId + "/file";  
return request.ExecuteGet();
```

The **Define Parameters Script** adds the two [parameters](#) that are used to replace the placeholders in the set URL in the first line of the Get Page Script:

```
parameters.Add("DataCenter", "string", "us1");  
parameters.Add("ID", "string", "a12BXu");
```

ConversionHelper

The **ConversionHelper** class provides some helper methods that you can access if needed from your script for converting values for your request or from the response.

CalculateMd5Hash Method

This method calculates an MD5 hash of an input string.

```
CalculateMd5Hash(string input)
```

Parameter	Type	Description
<i>input</i>	string	A value to hash using the MD5 algorithm.
Returns:	string	The MD5 hash of the input string.

Example:

```
var hash = ConversionHelper.CalculateMd5Hash(inputString);
```

GetJsonValue Method

This method extracts a single value from JSON content according to a [JSONPath expression](#).

```
GetJsonValue(string json, string jsonPath)
```

Parameter	Type	Description
<i>json</i>	string	Text in JSON format.
<i>jsonPath</i>	string	A JSONPath expression.
Returns:	string	A single property value or object extracted from the input <i>json</i> as a string. Depending on the value, the returned string could represent a subset of the original JSON, a string value enclosed in quotation marks, a number, a Boolean value, or null. An error may occur if multiple JSON tokens match your JSONPath expression, e.g., matching multiple items in an array.

Example:

```
string progressId = ConversionHelper.GetJsonValue(response.Content, "$.result.progressId");
progressId = progressId.Replace("\"", ""); // remove quotation marks from the JSON string value
```

GetXmlValue Method

This method extracts a portion of XML content according to an XPath expression.

```
GetXmlValue(string xml, string xPath, IDictionary<string, string> namespaces = null)
```

Parameter	Type	Description
<i>xml</i>	string	Text in XML format.
<i>xPath</i>	string	An XPath expression.
<i>namespaces</i>	IDictionary<string, string>	(Optional) A dictionary containing namespace URIs keyed by prefixes that may be used in the XPath expression.
Returns:	string	A subset of the input <i>xml</i> corresponding to the <i>xPath</i> .

Example:

```
ConversionHelper.GetXmlValue(response.Content, "book");
```



ToBase64String Method

This method encodes a string of Unicode characters to bytes and converts these to a string of base-64 digits.

```
ToBase64String(string original)
```

Parameter	Type	Description
<i>original</i>	string	A string to convert.
Returns:	string	The string representation in base 64.

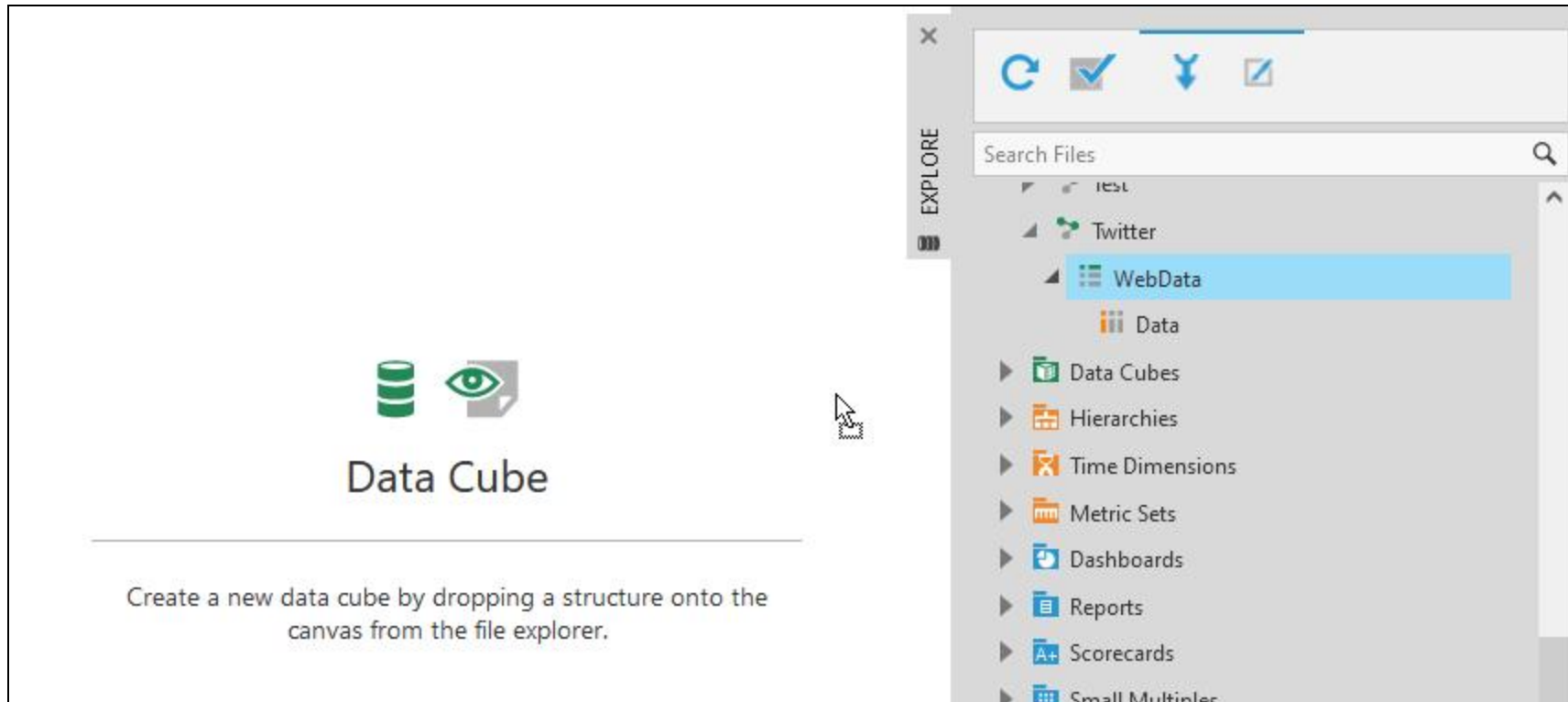
Example:

```
string base64 = ConversionHelper.ToBase64String(text);
```

Transform the Result

The response to most web requests is a block of text in JSON or XML format. You can transform this into regular columns of data using a [data cube](#) to make its individual values ready to analyze and visualize.

After creating or opening an existing data cube, expand your new data connector in the **Explore** window and drag the *WebData* structure onto the canvas to add it as a [Tabular Select](#) transform.



You can insert a [Flatten JSON](#) or [Flatten XML](#) transform depending on which format the API returns, or you can use any of the other [available transforms](#).

If the [Define Parameters script](#) in the data connector exposes parameters, you can configure these in the Tabular Select transform in a similar way as [for a SQL select](#).

For more information, see:

- [Connect to Data and View it on a Dashboard](#)

Connecting to Google Analytics

This applies to: *Managed Dashboards, Managed Reports*

Google Analytics is a service offered by Google that compiles statistics regarding visitors to a website.

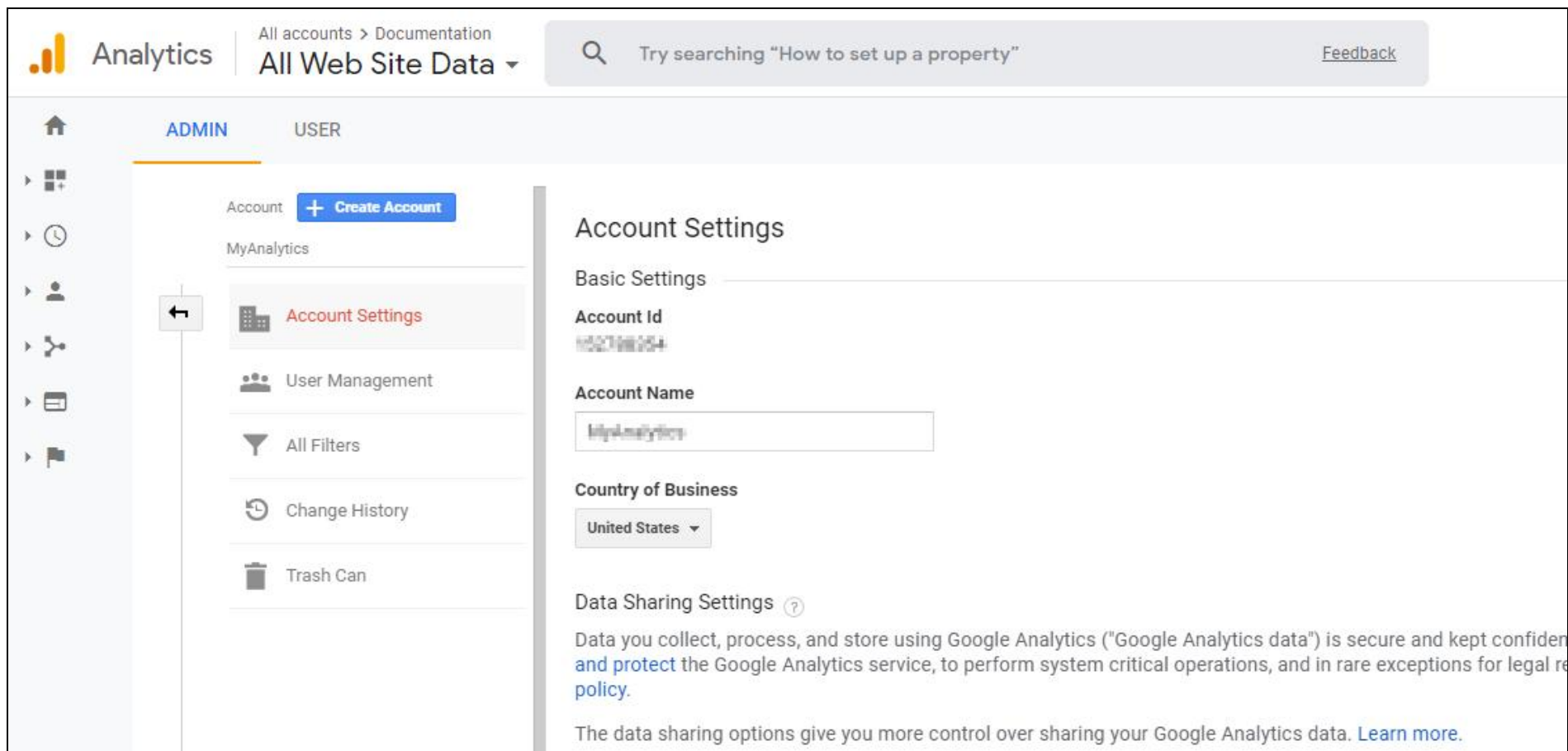
This article shows you how to set up a data connector to extract data from your Google Analytics account.



Note: Upgrade to v23.3 or higher to connect to a [Google Analytics 4](#) property. The Google Analytics data provider from earlier versions supports only [Universal Analytics](#) properties.

Google Analytics Account

You need a [Google Analytics](#) account in order to create this data connector in Managed Dashboards.



Analytics | All accounts > Documentation | All Web Site Data ▾ | Try searching "How to set up a property" | [Feedback](#)

ADMIN | USER

Account [+ Create Account](#)

MyAnalytics

[←](#) **Account Settings**

User Management

All Filters

Change History

Trash Can

Account Settings

Basic Settings

Account Id
102788204

Account Name

Country of Business

Data Sharing Settings [?](#)

Data you collect, process, and store using Google Analytics ("Google Analytics data") is secure and kept confidential and protect the Google Analytics service, to perform system critical operations, and in rare exceptions for legal requirements. [Learn more.](#)

The data sharing options give you more control over sharing your Google Analytics data. [Learn more.](#)

Setup

Cloud Console Project

Create or use an existing project in the Google Cloud Console as a first step.

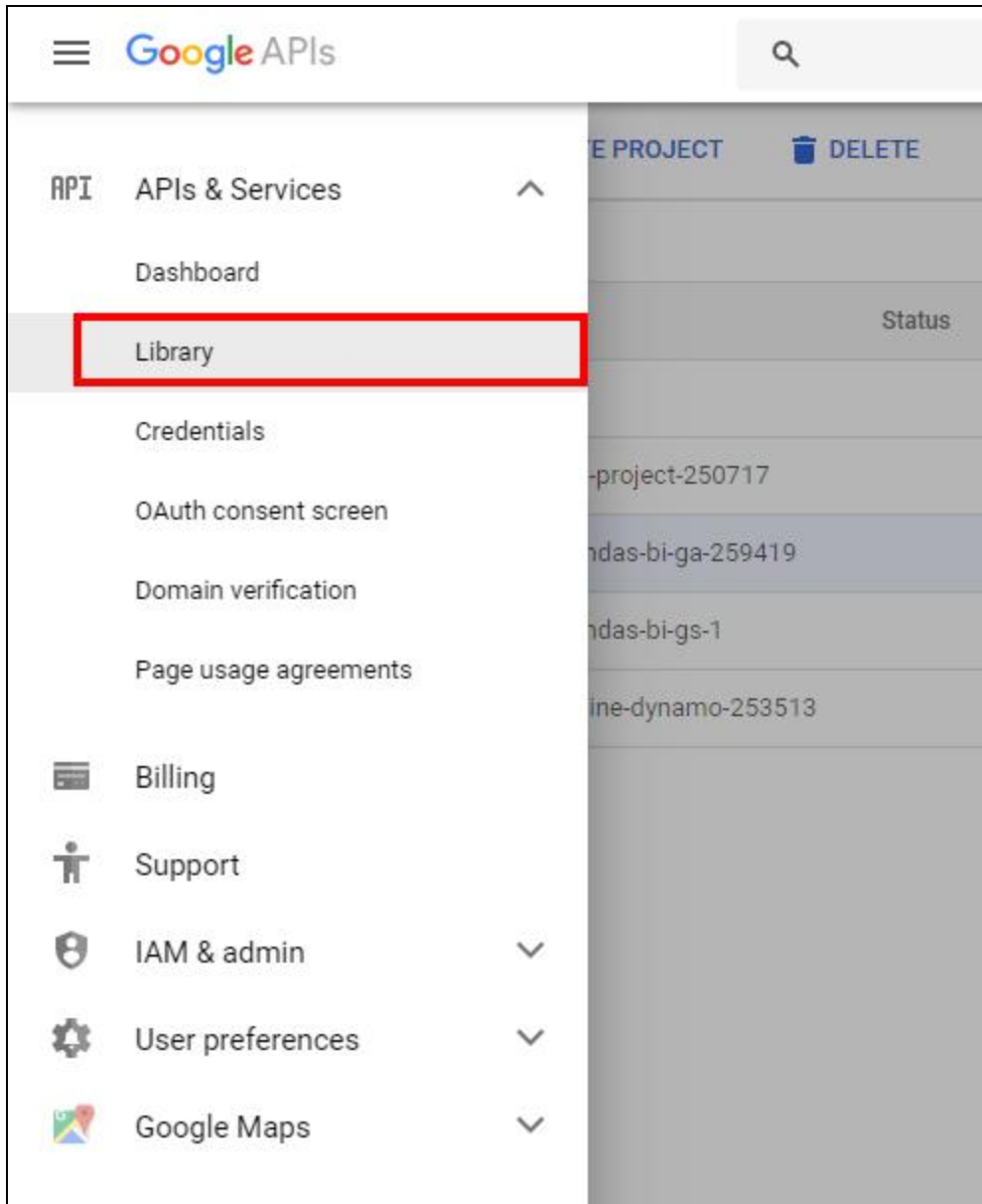
Go to <https://console.cloud.google.com/cloud-resource-manager> and sign into your Google account.

Once signed in, on this page you'll see a list of existing projects (if there are any) or you can select **Create project** to create a new one.

☰ Google APIs 🔍						
Manage resources + CREATE PROJECT 🗑 DELETE						
☰ Filter tree						
☐	Name	ID	Status	Charges	Labels	Actions
☐	▼  No organization	0				⋮
☐	 API Project	api-project-2500717				⋮
☐	 Dundas BI GS	dundas-bi-gs-1				⋮
☐	 My Project 32203	api-project-2500717				⋮

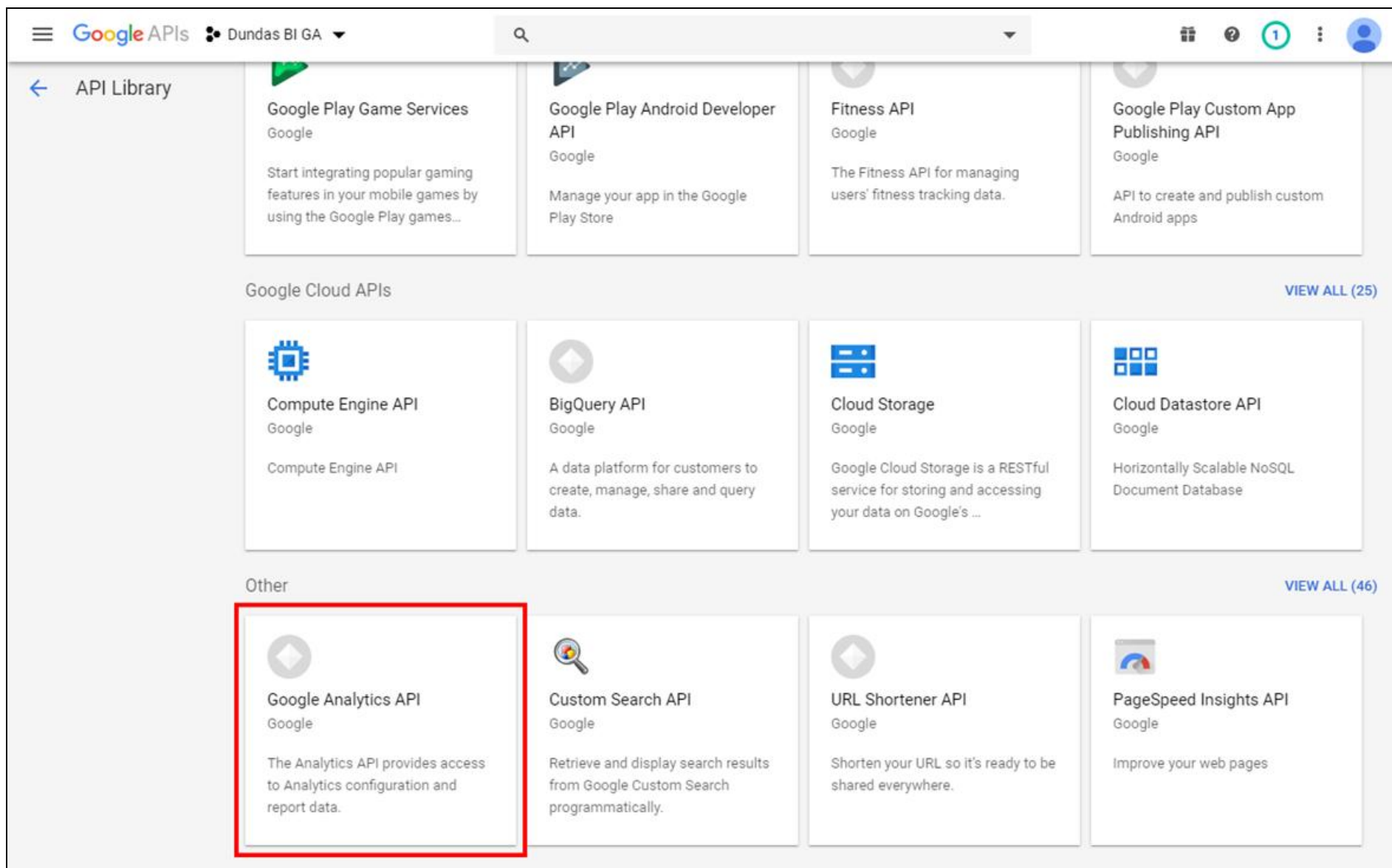
Enable the Analytics API

Select the menu button in the top-left corner of the Cloud Console, expand **APIs & Services** and select **Library**.



Ensure the correct project is selected at the top-left of the screen, then find and select the API for your version of Google Analytics:

- For a [Universal Analytics](#) property, enable the **Google Analytics API**.
- For a [Google Analytics 4](#) property, enable the **Google Analytics Data API**.



The screenshot shows the Google APIs console interface. At the top, there's a header with the Google APIs logo, a dropdown menu showing 'Dundas BI GA', a search bar, and user profile icons. The main content area is titled 'API Library' and is divided into three sections: 'Google Play APIs', 'Google Cloud APIs', and 'Other'. Each section contains a grid of API cards. The 'Google Analytics API' card is highlighted with a red rectangular box. The card for the Google Analytics API includes the following text:

- Google Analytics API**
- Google
- The Analytics API provides access to Analytics configuration and report data.



- Archive of documentation for Logi Symphony v24

Select **Enable** for the appropriate API if not yet enabled.

API Library



Google Analytics API

Google

The Analytics API provides access to Analytics configuration and report data.

ENABLE

TRY THIS API 

Type

APIs & services

Last updated

9/12/19, 11:29 PM

Service name

analytics.googleapis.com

Overview

The Analytics API provides access to Analytics configuration and report data.

About Google

Google's mission is to organize the world's information and make it universally accessible and useful. Through products and platforms like Search, Maps, Gmail, Android, Google Play, Chrome and YouTube, Google plays a meaningful role in the daily lives of billions of people.

Tutorials and documentation

[Learn more](#) 

Terms of service

By using this product you agree to the terms and conditions of the following license(s): [Google APIs Terms of Service](#) 

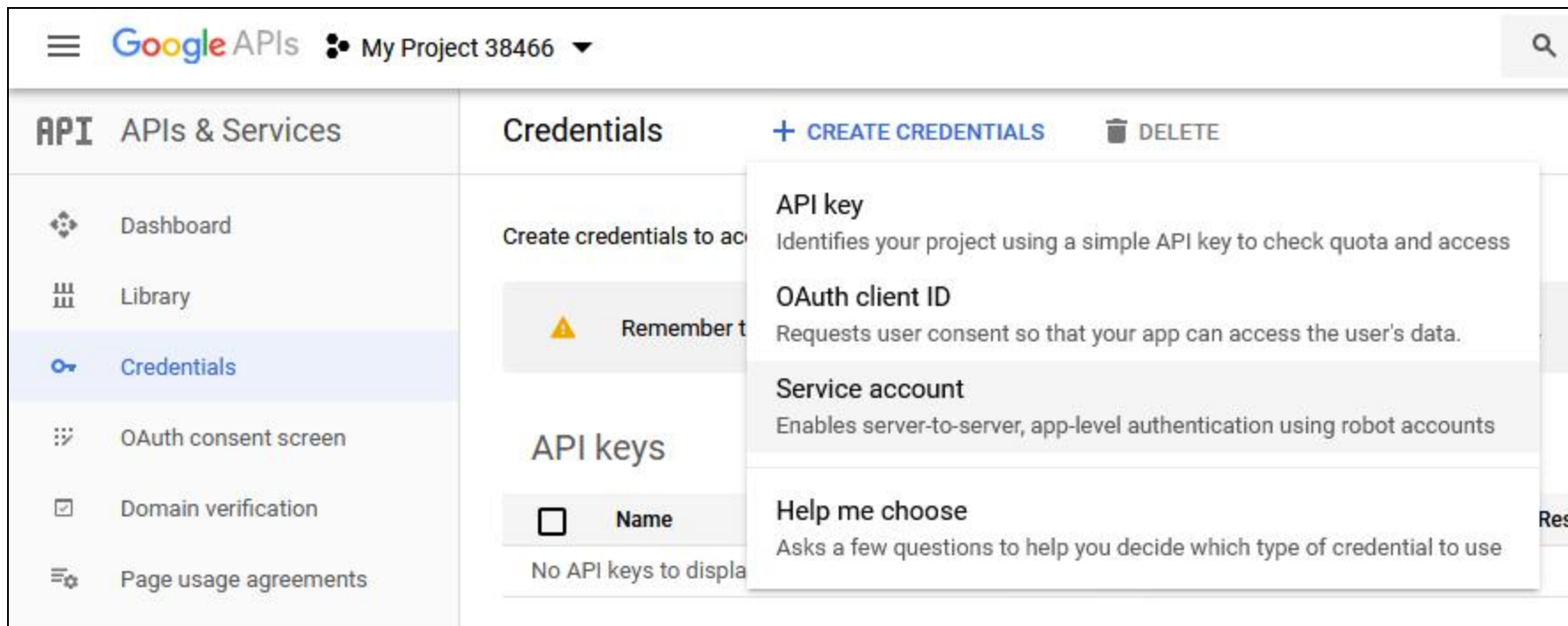


Note: There are multiple APIs available with *Google Analytics* in the name and their names may change over time. The Symphony data connector should require the one mentioned above unless an error message specifies a different one when you try to

Service Account Credentials

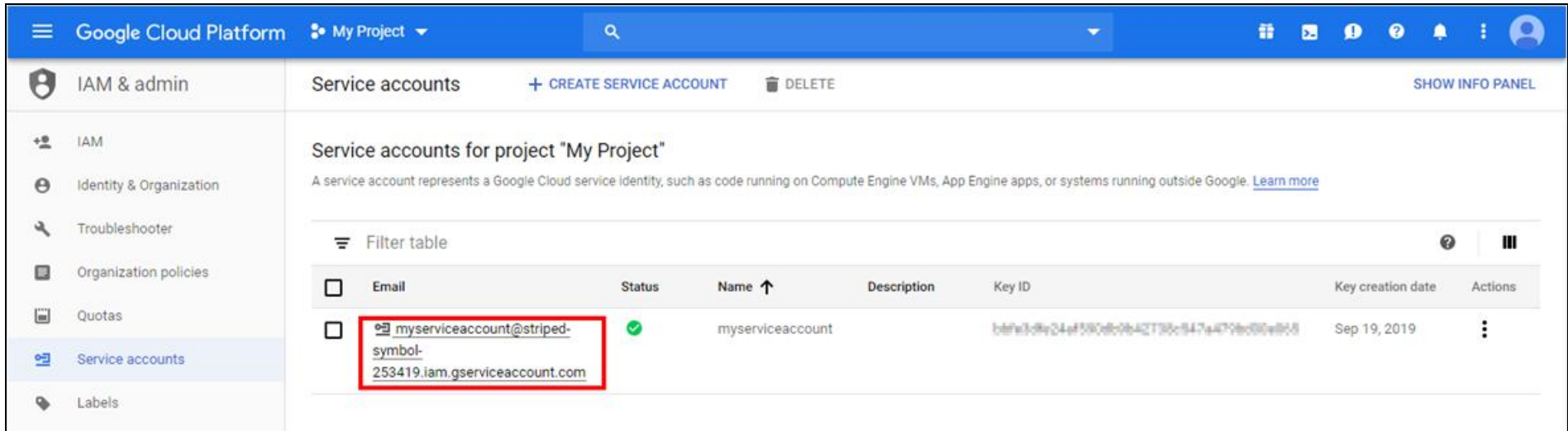
This section shows you how to generate Service account credentials which will allow Symphony to access your Google Analytics data.

From the left navigation, select **Credentials**. Select **Create credentials** and select the **Service account** option.



Enter a name and a role for the account.

When done, record the service account email address. Copy this from the account details and paste it somewhere to refer to later such as a Notepad app on your computer.



Google Cloud Platform My Project

IAM & admin

Service accounts + CREATE SERVICE ACCOUNT DELETE SHOW INFO PANEL

Service accounts for project "My Project"

A service account represents a Google Cloud service identity, such as code running on Compute Engine VMs, App Engine apps, or systems running outside Google. [Learn more](#)

Filter table

Email	Status	Name ↑	Description	Key ID	Key creation date	Actions
☐ myserviceaccount@striped-symbol-253419.iam.gserviceaccount.com	✓	myserviceaccount		b1bf13-d9c24ef580e8-9b42735c147a479ec00e9f5	Sep 19, 2019	⋮

Next, add a new key for the service account. For example, click to edit the service account and select **Add Key**. Choose a **JSON** key type.

When finished, a certificate file should be downloaded. This file will be needed later to set up a data connector in Symphony.

P12 File Type

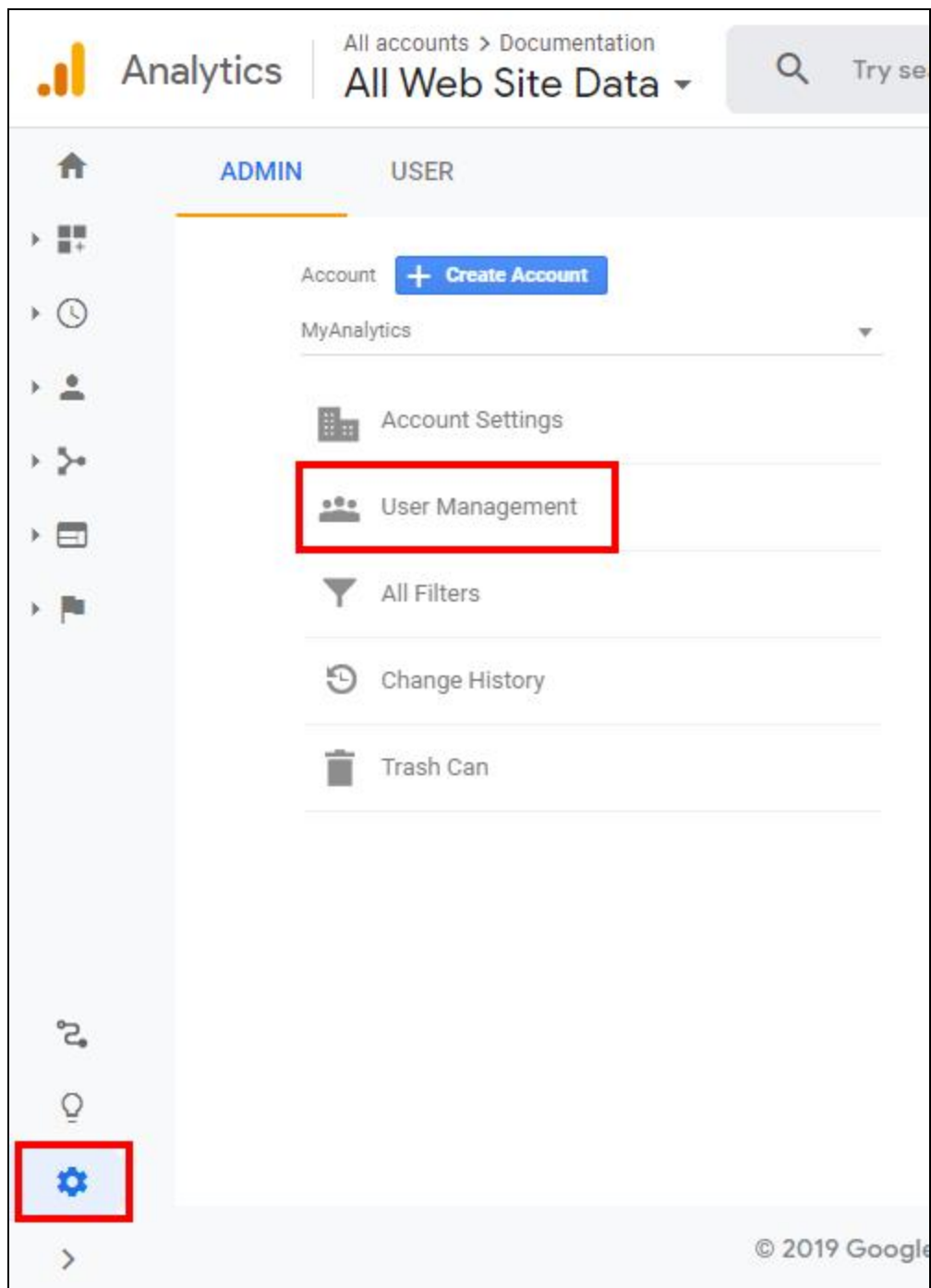
If you need a P12 key type for a Universal Analytics property instead of the default JSON, additional details are needed.

A popup should be displayed that shows the **password** for the private key. Copy and paste this password with your service account e-mail to refer to later.

Authorization

Now that the client credentials have been generated, sign into your Google Analytics account in order to give authorization to these credentials.

Go to the **Admin** area and choose the option similar to **User Management** or **Property Access Management**.

The screenshot shows the Logi Analytics Admin interface. At the top, there's a header with the "Analytics" logo, a breadcrumb "All accounts > Documentation", and a search bar. Below the header, there are two tabs: "ADMIN" (selected) and "USER". The main content area under the "ADMIN" tab lists several options: "Account" with a "+ Create Account" button, "MyAnalytics" (a dropdown menu), "Account Settings", "User Management" (highlighted with a red box), "All Filters", "Change History", and "Trash Can". On the left side, there's a vertical sidebar with various icons. The bottom-most icon in this sidebar, a blue gear, is also highlighted with a red box. At the bottom right of the interface, there is a copyright notice: "© 2019 Google".

If not already listed, click to add the service account, entering the email address that you recorded earlier. Ensure it has an appropriate role or permissions set up to read data. See [Google Help](#) for details.

×
MyAnalytics

Add permissions

Add

Email addresses

myserviceaccount@dundas-bi-ga-259419.iam.gserviceaccount.com

×

☒ Notify new users by email

Permissions

Edit

Can create and edit properties, views, filters, goals, etc. Cannot manage users. [Learn more](#)

☐

Collaborate

Can create and edit shared assets, like dashboards or annotations. [Learn more](#)

☐

Read & Analyze

Can view report and configuration data. [Learn more](#)

☒

Manage Users

Can add users, delete users, and change user permissions. [Learn more](#)

☐



New Data Connector

From the main menu in Symphony, select **New**, and then select **Data Connector**.

In the *New Data Connector* dialog, assign a **Name** for your connector, and set the **Data Provider** drop-down:

- For a [Universal Analytics](#) property, choose *Google Analytics*.
- For a [Google Analytics 4](#) property, choose *Google Analytics Data API (GA4)*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Google Analytics

Test connection 

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Upload Private Key File (.P12 Or .JSON)

Choose File

No file chosen

Use Reporting API

☒

Sampling Level

DEFAULT - balances speed and accuracy

Select structures



Check In





- Archive of documentation for Logi Symphony v24

Select **Choose File** and select the certificate file downloaded earlier, then review the options:

- If the certificate file is of a P12 file type, you have to provide the **Service Account E-Mail Address** and **Password For The .P12 File** that you recorded previously.
- When the **Use Reporting API** checkbox is selected, the [core v4](#) version of the API will be used. If unchecked, the [core v3](#) version will be used.
- Choose from the available **Sampling Level** options.
- For a Google Analytics 4 property, enter the numeric property ID. This is listed in various places in Google Analytics, or go to [Admin](#), edit **Property Settings**, and click to copy the property ID.

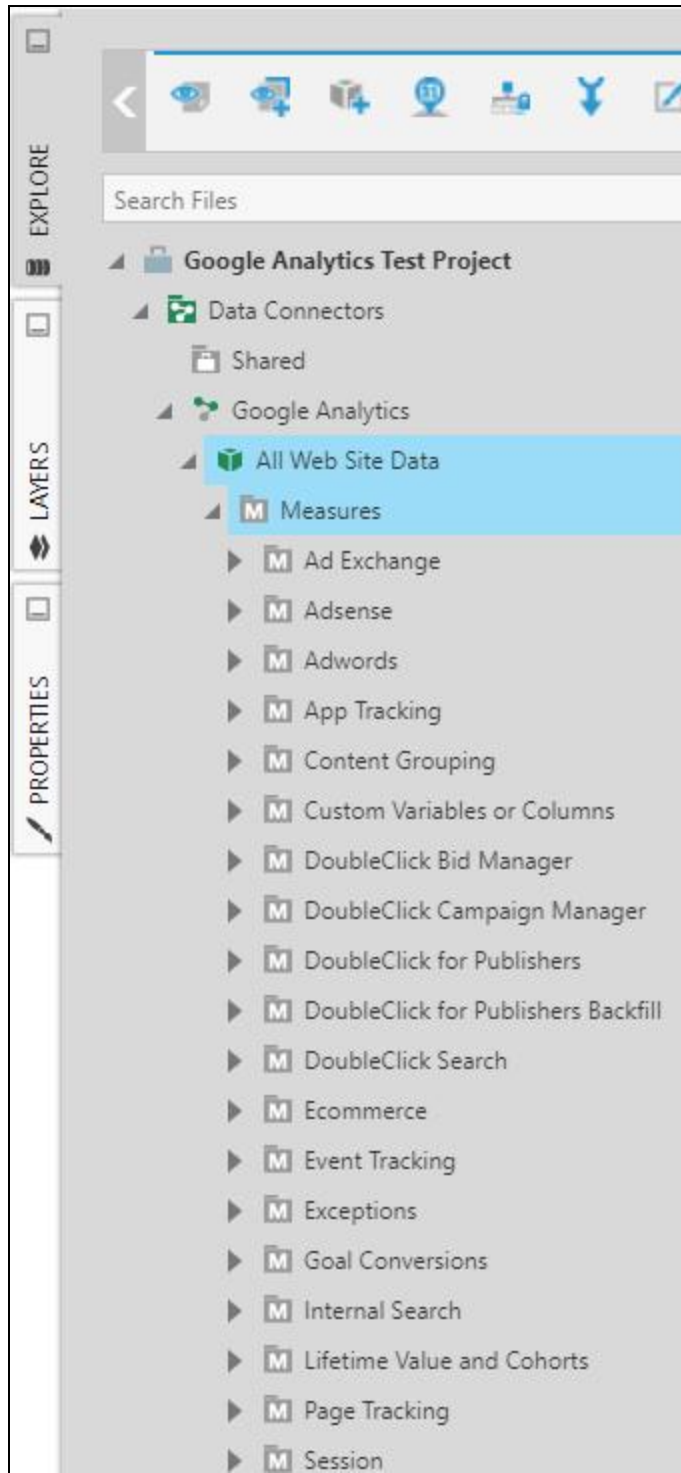
Select **Test connection** to check the connection to your account.

Select the submit button at the bottom to save and check in the data connector, and perform data discovery.

Display Google Analytics Data

To see the Google Analytics data, create a new metric set or dashboard.

Go to the **Explore** window, expand your data connector and its cube, then drag its measures and dimensions to the canvas.





- Archive of documentation for Logi Symphony v24

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [Google Analytics](#)



- Archive of documentation for Logi Symphony v24

Connecting to Google Sheets

This applies to: *Managed Dashboards, Managed Reports*

[Google Sheets](#) are spreadsheets that you can create and edit online.

Set up a data connector in Symphony to load data from a Google spreadsheet via the Google Drive API.








Sheets

Start a new spreadsheet

MORE 




Blank



To-do list



Annual budget



Monthly budget

Recent spreadsheets

Owned by anyone 

Date	TargetSales	Chk
1/2/2000	1000000	1/1/1/2011
1/3/2000	800000	1/1/2/1/11
1/4/2000	600000	1/1/3/1/11
1/5/2000	400000	1/1/4/1/11
1/6/2000	200000	1/1/5/1/11
1/7/2000	300000	1/1/6/1/11
1/8/2000	500000	1/1/7/1/11
1/9/2000	700000	1/1/8/1/11
1/10/2000	900000	1/1/9/1/11
1/11/2000	1100000	1/1/10/1/11
1/12/2000	1300000	1/1/11/1/11
1/1/2001	1500000	1/1/12/1/11

Sales by Month 2015

 Opened 15:54

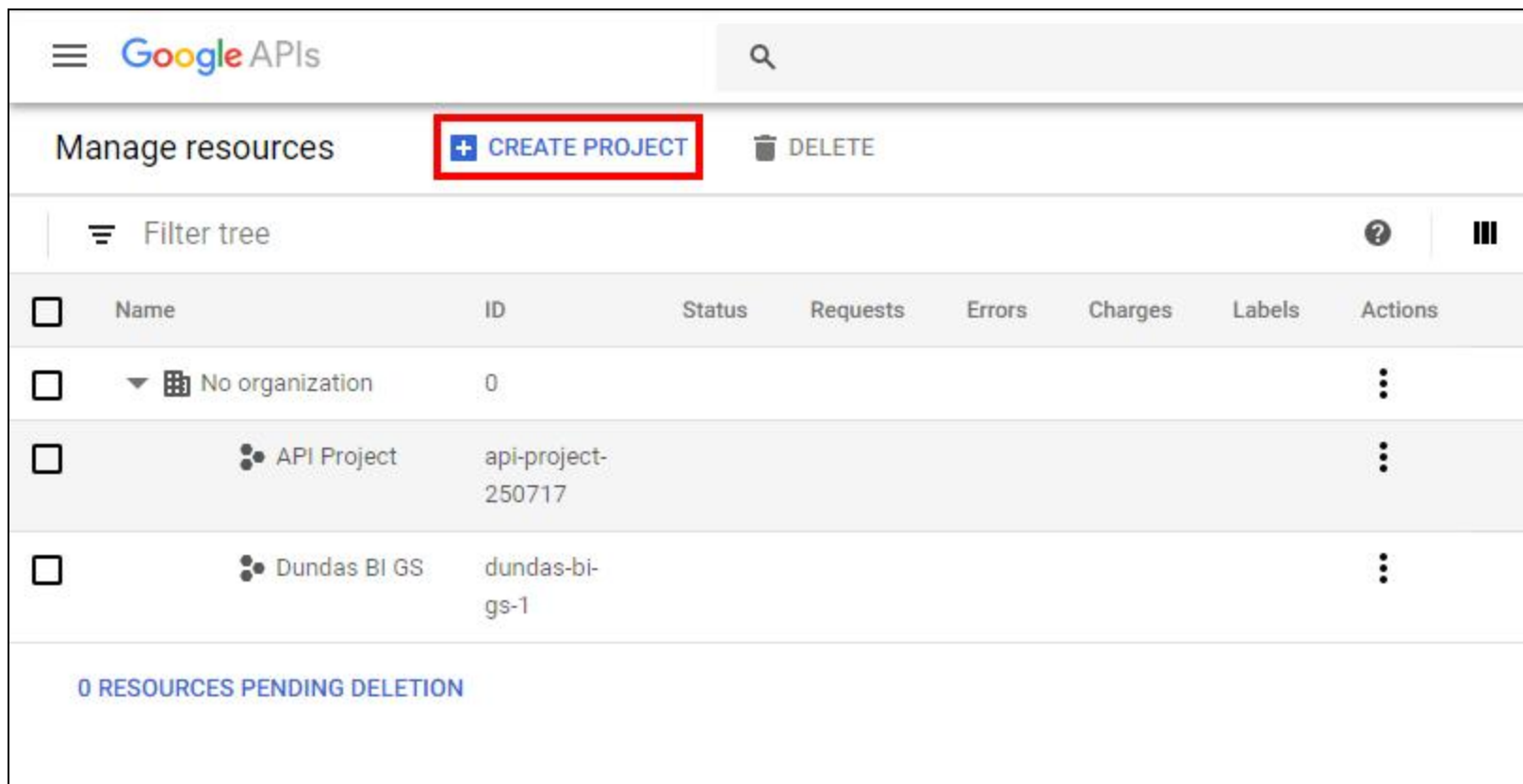
Setup

Create or Choose a Project

Go to <https://console.cloud.google.com/> and sign into your Google account.

Once signed in, you can create or choose an existing project to use. The current project is often listed at the top of the screen and you can click to see a list of projects and switch between them or to create a new one.

The [cloud resource manager](#) page should also list your projects and allow you to create a new one.



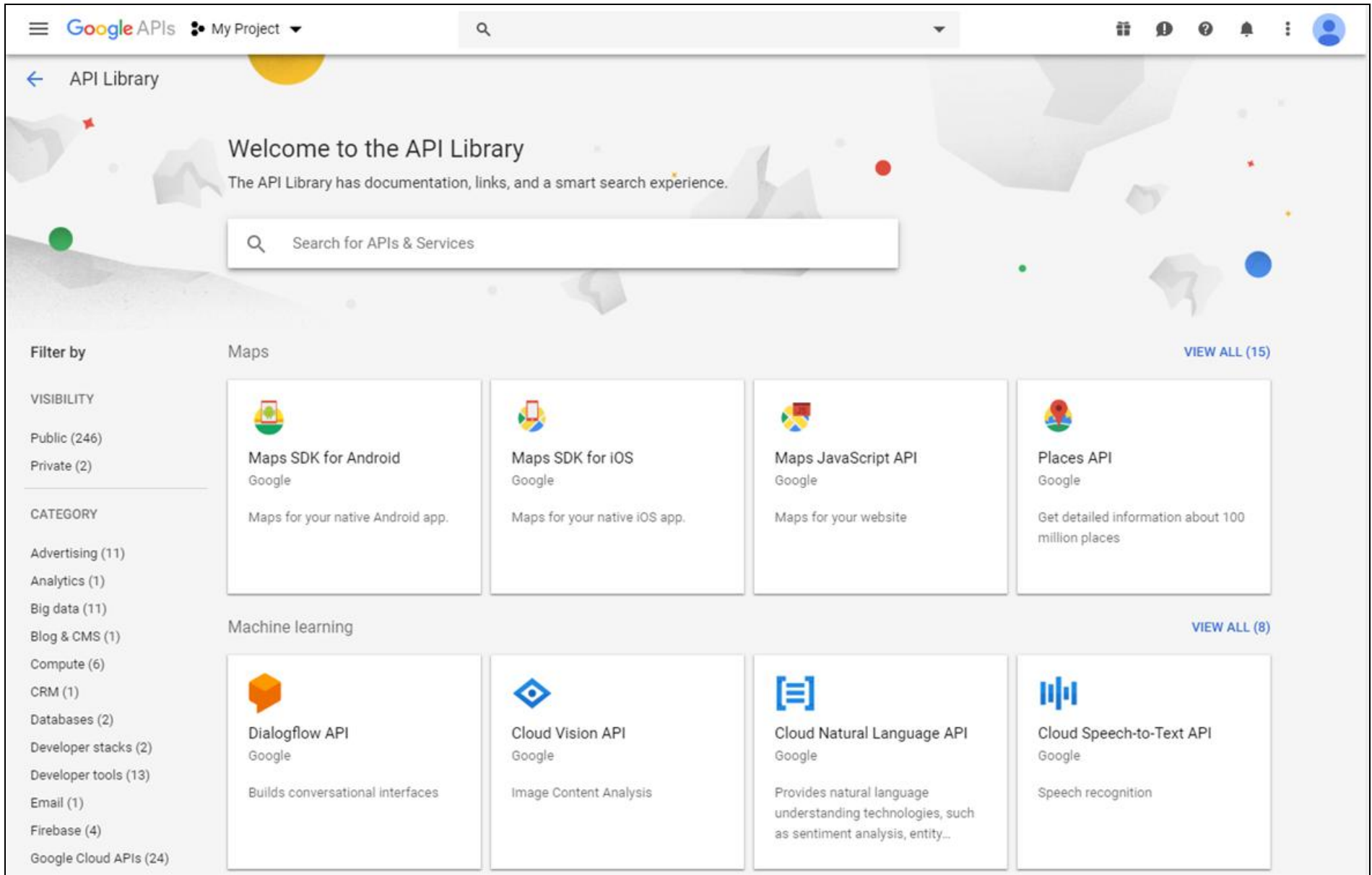
The screenshot shows the Google Cloud Platform 'Manage resources' page. At the top, there is a search bar and a 'Manage resources' header. A red box highlights the '+ CREATE PROJECT' button. Below the header, there is a 'Filter tree' section. The main table lists projects with columns: Name, ID, Status, Requests, Errors, Charges, Labels, and Actions. The table contains three rows: 'No organization' (ID: 0), 'API Project' (ID: api-project-250717), and 'Dundas BI GS' (ID: dundas-bi-gs-1). At the bottom, there is a status bar indicating '0 RESOURCES PENDING DELETION'.

Name	ID	Status	Requests	Errors	Charges	Labels	Actions
▼ No organization	0						⋮
API Project	api-project-250717						⋮
Dundas BI GS	dundas-bi-gs-1						⋮

0 RESOURCES PENDING DELETION

Enable the Drive and Sheets APIs

Click to access the navigation menu from the top-left corner, hover over **APIs and services** and select **Library**.



The screenshot shows the Google API Library interface. At the top, there's a navigation bar with the Google APIs logo, a 'My Project' dropdown, a search bar, and user profile icons. Below the navigation bar, the page is titled 'API Library' with a back arrow. A large welcome message reads 'Welcome to the API Library' followed by 'The API Library has documentation, links, and a smart search experience.' Below this is a search bar labeled 'Search for APIs & Services'. On the left side, there's a 'Filter by' section with two categories: 'VISIBILITY' (Public (246), Private (2)) and 'CATEGORY' (Advertising (11), Analytics (1), Big data (11), Blog & CMS (1), Compute (6), CRM (1), Databases (2), Developer stacks (2), Developer tools (13), Email (1), Firebase (4), Google Cloud APIs (24)). The main content area displays two sections of APIs: 'Maps' and 'Machine learning'. The 'Maps' section has a 'VIEW ALL (15)' link and lists four APIs: 'Maps SDK for Android', 'Maps SDK for iOS', 'Maps JavaScript API', and 'Places API'. The 'Machine learning' section has a 'VIEW ALL (8)' link and lists four APIs: 'Dialogflow API', 'Cloud Vision API', 'Cloud Natural Language API', and 'Cloud Speech-to-Text API'.

Filter by

VISIBILITY

- Public (246)
- Private (2)

CATEGORY

- Advertising (11)
- Analytics (1)
- Big data (11)
- Blog & CMS (1)
- Compute (6)
- CRM (1)
- Databases (2)
- Developer stacks (2)
- Developer tools (13)
- Email (1)
- Firebase (4)
- Google Cloud APIs (24)

Maps [VIEW ALL \(15\)](#)

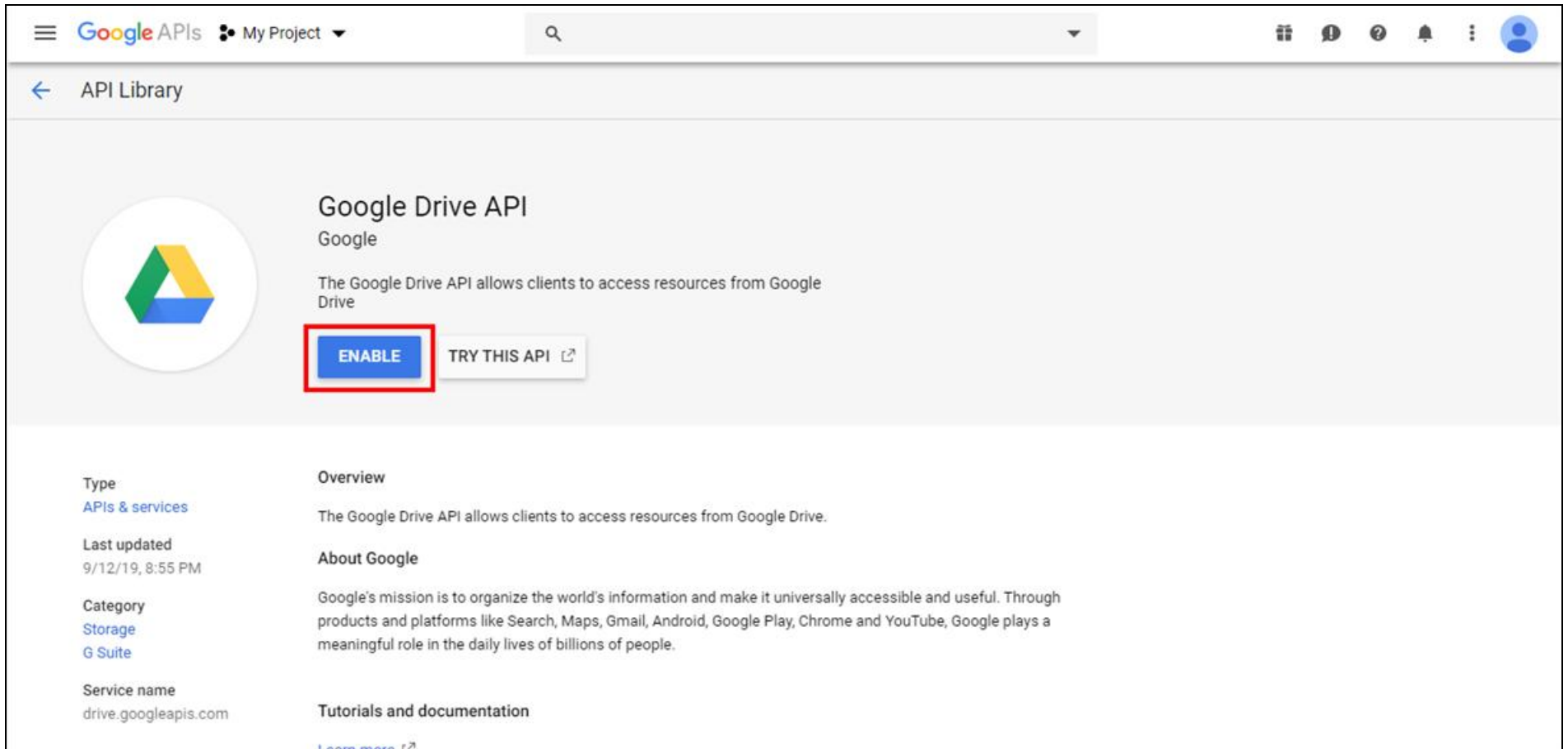
- Maps SDK for Android**
Google
Maps for your native Android app.
- Maps SDK for iOS**
Google
Maps for your native iOS app.
- Maps JavaScript API**
Google
Maps for your website
- Places API**
Google
Get detailed information about 100 million places

Machine learning [VIEW ALL \(8\)](#)

- Dialogflow API**
Google
Builds conversational interfaces
- Cloud Vision API**
Google
Image Content Analysis
- Cloud Natural Language API**
Google
Provides natural language understanding technologies, such as sentiment analysis, entity...
- Cloud Speech-to-Text API**
Google
Speech recognition

Ensure the correct project is selected at the top of the page, then search for and select **Google Drive API**.

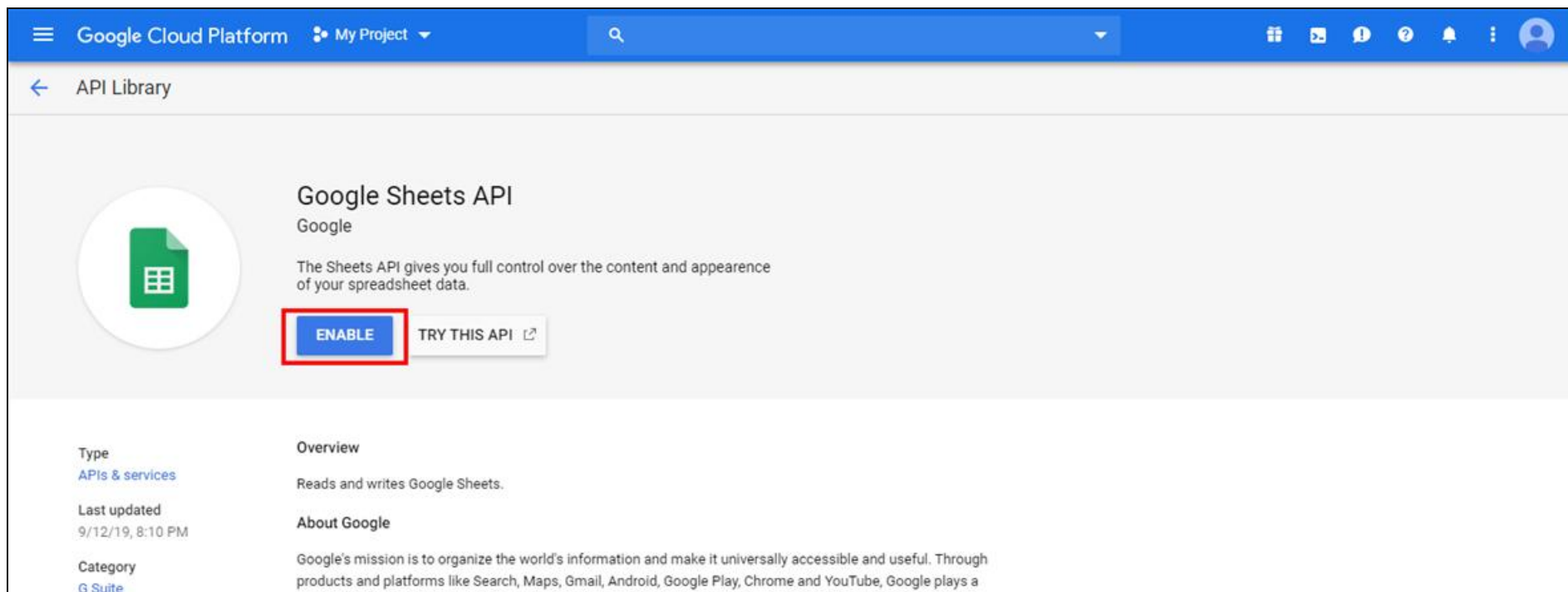
Select **Enable**.



The screenshot shows the Google APIs console interface. At the top, there's a navigation bar with the Google APIs logo, a 'My Project' dropdown, a search bar, and several utility icons. Below this, the 'API Library' section is active. The main content area displays the 'Google Drive API' by Google. It includes the Google Drive logo, a description: 'The Google Drive API allows clients to access resources from Google Drive', and two buttons: 'ENABLE' (highlighted with a red box) and 'TRY THIS API' with an external link icon. On the left side, there's a sidebar with metadata: Type (APIs & services), Last updated (9/12/19, 8:55 PM), Category (Storage, G Suite), and Service name (drive.googleapis.com). The right side of the main area has sections for 'Overview' (repeating the description), 'About Google' (Google's mission statement), and 'Tutorials and documentation' (with a 'Learn more' link).

Return to the library, then search for and select **Google Sheets API**.

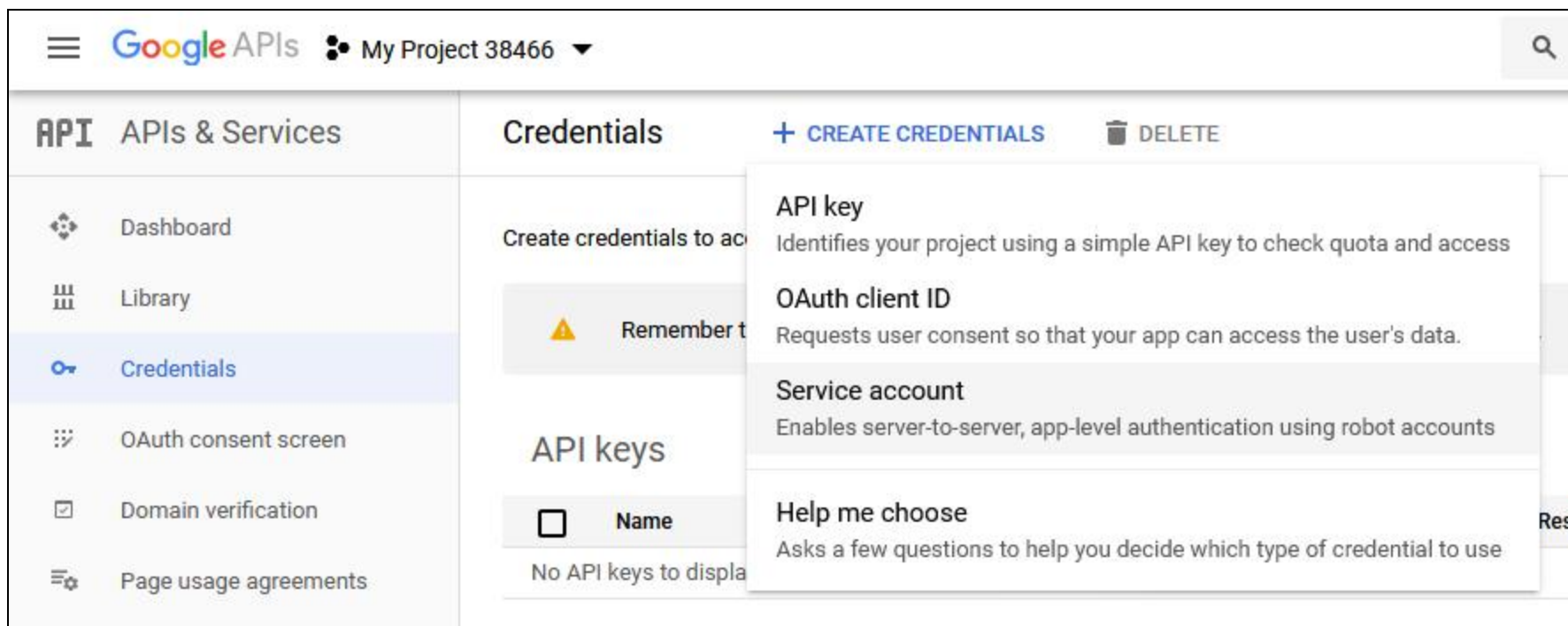
Select **Enable**.



Service Account Credentials

Service account credentials allow Symphony to access your data from Google.

To create credentials, from the navigation menu, hover over **APIs and services** and select **Credentials**. On the **Credentials** page, select **Create credentials** and select **Service account**.



Google APIs My Project 38466

APIs & Services

- Dashboard
- Library
- Credentials**
- OAuth consent screen
- Domain verification
- Page usage agreements

Credentials + CREATE CREDENTIALS DELETE

Create credentials to access APIs

Remember this credential?

API keys

Name
No API keys to display

API key
Identifies your project using a simple API key to check quota and access

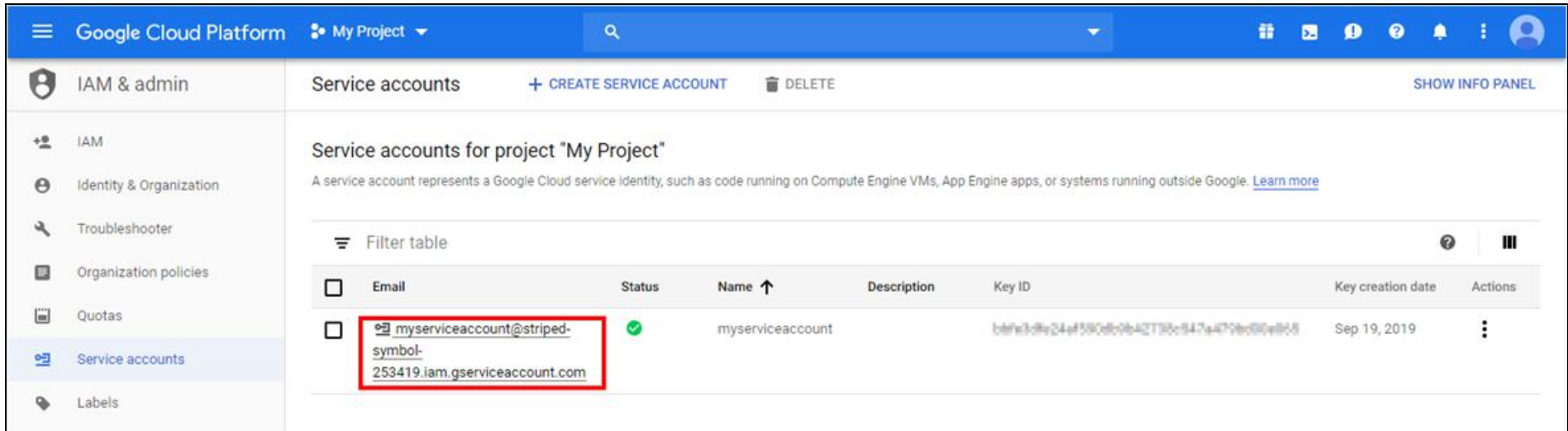
OAuth client ID
Requests user consent so that your app can access the user's data.

Service account
Enables server-to-server, app-level authentication using robot accounts

Help me choose
Asks a few questions to help you decide which type of credential to use

Enter a name and role for your service account.

When done, record the service account's e-mail address, for example by opening Notepad on your computer and pasting it.



Google Cloud Platform My Project

IAM & admin

Service accounts + CREATE SERVICE ACCOUNT DELETE SHOW INFO PANEL

Service accounts for project "My Project"

A service account represents a Google Cloud service identity, such as code running on Compute Engine VMs, App Engine apps, or systems running outside Google. [Learn more](#)

Filter table

Email	Status	Name ↑	Description	Key ID	Key creation date	Actions
☐ myserviceaccount@striped-symbol-253419.iam.gserviceaccount.com	✓	myserviceaccount		b1f1e3-d9c24ef580e8-9b42735c547a479ec00e9f5	Sep 19, 2019	⋮

Next, add a key to your service account. For example, click to edit the new service account, go to the **Keys** tab if applicable, and select **Add Key**. Choose a **JSON** key type.

When finished, a certificate file should be downloaded. This file will be needed later to set up a data connector in Symphony.

P12 File Type

If you require the P12 file type instead of the default JSON, you will require some additional information.

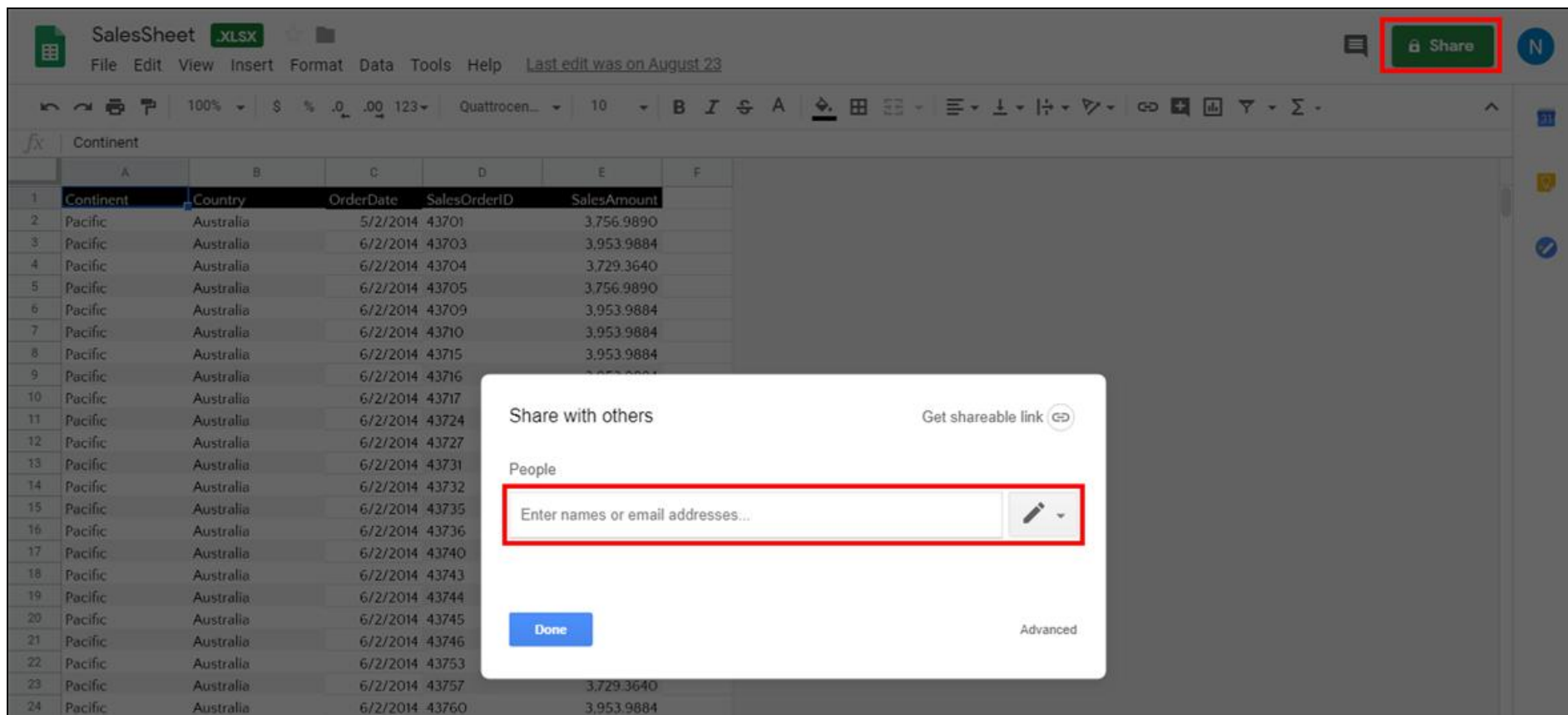
A pop-up will appear displaying the **password** for the private key. Copy and paste this with the service account's e-mail address for later use.

Authorization

Now that the credentials have been generated, they must also be authorized to access the spreadsheet data. There are a couple of ways to proceed depending on the type of account used to create the spreadsheets.

If you used a Gmail account to create your spreadsheets, first sign into Google Sheets. Open a spreadsheet that you want to connect to from Symphony. Select **Share** in the top right corner.

Enter the Service account email address which you recorded previously (e.g., in Notepad), or it may be automatically suggested if you've already used it. Customize the permission level to **Viewer** and clear the option to notify if preferred, then select **Share** or **Send**.



If the spreadsheets you want to connect to were created with a Google Apps domain account, your Google Apps domain administrator must perform the authorization. The steps are generally described here: [Delegate domain-wide authority to your service account](#). You'll need the **Client ID** for the service account (see previous section) and also make sure the **API Scopes** field includes the following:

```
https://docs.google.com/feeds,https://spreadsheets.google.com/feeds
```

Data Connector

Log on to Symphony and create a new data connector.

Enter a **Name** for the connector, then set the **Data Provider** drop-down to **Google Sheets**.

Select **Choose File** and select the certificate file which you downloaded.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Google Sheets

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Upload Private Key File (.P12 Or .JSON)

Choose File No file chosen

Spreadsheet

Advanced

Define structure

Check in

☒

Add a check in comment



- Archive of documentation for Logi Symphony v24

- If the certificate file is of a P12 file type, you now have to provide the **Service Account E-Mail Address** and **Password For the .P12 File** that you recorded previously.
- If you are using the **Delegate domain-wide authority** authorization method, click to expand the **Advanced** options to enter the **User Account E-mail Address** for the account that created the spreadsheets. Otherwise, leave this field blank.

Type in the title of your **Spreadsheet**, or select from the popup that appears below this field.

You can include the wildcard characters * or ? in the spreadsheet title to refer to multiple spreadsheets with the same structure. This will access their combined data from the same data connector, like in the example shown for [Excel](#).

Select **Submit** at the bottom of the dialog to save and check in the data connector and automatically discover the data's structure.

Connecting to IBM DB2

Connecting in Managed Dashboards and Managed Reports

This applies to: *Managed Dashboards, Managed Reports*

This article provides additional details on connecting to an IBM DB2 database.



Note: IBM DB2 does not support concurrent use of ODBC and .NET providers from the same application. To avoid issues, make sure that you consistently connect to a DB2 server using the same data provider in your data connectors.

Data Connector Settings

Create a [new data connector](#) and set **Data Provider** drop-down to *IBM DB2 Database*.

Provide credentials, and the **Server** and the **Database** name.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

User ID

Password

Server

Database

Select structures 



There are various other settings supported by DB2 that you can configure in each expandable section below. Hover over (or long-tap) a setting to see a tooltip description.



Note: Click to expand **Initialization** to find the Isolation Level, which can be set to *Read Uncommitted* [when appropriate](#) for better performance in high concurrency scenarios.



Note: The IBM DB2 data provider may not be able to connect to certain versions of DB2 such as AS/400. [ODBC](#) or [JDBC](#) drivers can be used instead.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)

Connecting to JDBC

This applies to: *Managed Dashboards, Managed Reports*

The JDBC generic data provider option lets you connect to data sources that have a JDBC driver. Since there are third-party drivers available for a wide range of databases and other data sources, this means that Symphony has the ability to connect to more data sources out-of-the-box than we can list. You can often use an existing JDBC driver rather than rely on a [custom data provider](#).



Note: Only the 64-bit versions of the JDBC drivers are supported.

Here are some examples of data sources that have a JDBC driver:

- Amazon Athena (Amazon S3)
- Apache Phoenix
- Hive
- Impala
- H2
- Confluence



Note: insightsoftware does not guarantee any specific third-party JDBC driver will work properly with Symphony. If you encounter any connection issues with a specific driver, contact technical support.

Install

When you or your organization have your own Symphony installation, you can install whichever drivers you like on the computer(s) where Symphony is installed. Symphony needs read access to the files.



Note: Services must be restarted after changing this setting or the files.



Connect

With a JDBC driver installed and configured, you can create a data connector in Symphony that uses the driver.

From the main menu, select **New**, and then select **Data Connector**.

In the *New Data Connector* dialog, set a **Name**, and then set **Data Provider** to *JDBC*.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

JDBC

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

JDBC URL

User Name

Password

► Advanced

Select structures 

Check In

☒

Add a check in comment 



Next, supply the required credentials:

1. Enter the **JDBC URL**. This will be different for every database and depends on the JDBC driver. For example, the [JDBC URL for Amazon Athena](#) is `jdbc:awsathena://athena.us-east-1.amazonaws.com:443`.
2. Enter the **User Name** for your database account.
3. Enter the **Password** for your database account.

If needed, click to expand the **Advanced** section to configure settings such as the following.

Driver Properties

Some connection properties cannot be included directly in the JDBC URL and have to be provided separately in the **Driver Properties** field. Similar to the URL, the list of properties and their format are different for each database and are typically documented by the JDBC driver provider.

For example, as [documented by Amazon](#), the Amazon Athena JDBC driver can take parameters as part of the JDBC URL:

```
jdbc:awsathena://athena.us-west-1.amazonaws.com:443?max_error_retries=20&connection_timeout=20000
```

But also requires the `s3_staging_dir` to indicate a location to which the query output is written:

```
s3_staging_dir=s3://aws-athena-query-results-154861344432-us-east-1
```

▼ Advanced

Driver Properties

s3_staging_dir=s3://aws-athena-query-results-15

Driver Class Name

Use PrepareStatement

☒

Use Default Fetch Size

☒

Specify Driver Capabilities

☐

Driver Class Name

Older JDBC drivers may require a **Driver Class Name** to enable the classes in the *JAR* file. For example, the main JDBC driver class for Amazon Athena is `com.amazonaws.athena.jdbc.AthenaDriver`.

Use PrepareStatement

Certain non-JDBC compliant drivers may produce an error in certain cases, which can be avoided by unchecking the **Use PrepareStatement** advanced option.

Fetch Size

In some cases, setting a specific fetch size may help if too much data is loaded into memory at once resulting in an *out of memory* exception from the driver.

Clear **Use Default Fetch Size** and set a number (e.g., *10000* rows).

Date Trim Expression

Depending on certain conditions, some functionality such as time dimensions normally result in queries sent to the data provider that trim some portions of date/time values, for example to keep only the year portion of the original date. The syntax for this expression varies depending on the particular data source and JDBC driver you are using, so script written in [DundasScript](#) can be set for the **Date Trim Expression** setting. Without this expression, an error may occur for certain operations unless the data is [stored in a data cube](#).

This script can access objects:

- `dateGranularity` (type: [DateTimeGranularity](#)) - The granularity or level to which the date should be trimmed.
- `dataTypeName` (type: string) - The name of the column's data type, such as `datetime` or `date`, which may affect whether or not a value needs trimming.
- `stringBuilder` (type: [StringBuilder](#)) - A string builder object instance that can optionally be used if needed.

The script should return a string representing a valid expression for the data source, including a placeholder `{0}` that will be replaced by a column expression when included in a query.

The following is a sample date trim expression for a Trino JDBC driver:

```
if (dataTypeName == null)
{
    dataTypeName = "datetime";
}

switch (dateGranularity)
{
    case DateTimeGranularity.Minute:
        if (dataTypeName.Equals("date", StringComparison.OrdinalIgnoreCase))
        {
            // No need to trim
            return "{0}";
        }
        else
        {
            return "date_trunc('minute', {0})";
        }
    case DateTimeGranularity.Hour:
        if (dataTypeName.Equals("date", StringComparison.OrdinalIgnoreCase))
        {
            // No need to trim
            return "{0}";
```

```
}
else
{
return "date_trunc('hour', {0})";
}
case DateTimeGranularity.Day:
if (dataTypeName.Equals("datetime", StringComparison.OrdinalIgnoreCase))
{
return "date_trunc('day', {0})";
}
else if (dataTypeName.Equals("date", StringComparison.OrdinalIgnoreCase))
{
// No need to trim
return "{0}";
}
else
{
return "date({0})";
}
case DateTimeGranularity.Month:
return "date_trunc('month', {0})";
case DateTimeGranularity.Year:
return "date_trunc('year', {0})";
default:
return null;
}

return null;
```

Java VM Path

Some JDBC drivers require additional binary libraries.

To indicate the location of such libraries, select **Admin** from the main menu when logged in as an administrator, click to expand **Setup** and select **Config** to navigate to [configuration settings](#).

Choose the option to show advanced settings, find the setting **JVM Library Path** and edit it to indicate the folder path.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [How to Recycle the Application Pool](#)



- Archive of documentation for Logi Symphony v24

- [Connecting to ODBC](#)

Connecting to Microsoft Dataverse

This applies to: *Managed Dashboards, Managed Reports*

This article describes how to enable connections to Microsoft Dynamics 365 from the Microsoft Dataverse data provider in Symphony.



Note: The Microsoft Dataverse data provider can connect to cloud versions of Microsoft Dynamics 365.

Register an Azure AD Application

Symphony and its Dataverse data provider will need to be registered as an Azure Active Directory application to enable access to your Dynamics data.

- From the [Azure Portal](#), navigate to **Azure Active Directory** and add a new app registration for Symphony. Take note of the **client ID** displayed on the overview page of the new app registration.
- Configure the **API permissions** to add a new app permission for Dynamics, choosing **delegated permissions** and **user_impersonation**.
- Configure the **Certificates & secrets** to add a new client secret, making sure to copy the created client secret value and save it as you will not be able to view it again.

You can follow a more detailed walkthrough in the *Azure application registration* section of the article [Use single-tenant server-to-server authentication](#) for Microsoft Dataverse in Microsoft Docs.

Add an Application User to Dynamics

As described in the article linked to above, the next step is to add an application user to your Dynamics environment that will access data on behalf of the Azure AD app you just registered.

For more details, see [Manage application users in the Power Platform admin center](#).

Data Connector Settings

After setting up an Azure app as described in the sections above, [create a data connector](#) and set **Data Provider** to *Microsoft Dataverse*.

If you have an existing data connector that used the previous *Microsoft Dynamics CRM* data provider, you can also edit it and click to change it to the new data provider as detailed below.

more help

New Data Connector

A data connector lets you connect to your data through a provider. Once the data connector's provider is saved, it cannot be changed.

Name

Data Connectors Root Folder/Dynamics

Select a name...

Data Provider

Microsoft Dataverse

Test connection



DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Service URL

Client ID

Client Secret

Define structure



Set the **Service URL** to your Microsoft Dynamics URL (e.g., <https://mycompany.crm.dynamics.com>).



- Archive of documentation for Logi Symphony v24

Enter the **Client ID** and **Client Secret** obtained for your Azure AD app.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)

Manage the MySQL Connector

This applies to: *Visual Data Discovery*

The Symphony MySQL connector lets you access the data available in MySQL databases using the Symphony client. The Symphony MySQL connector supports MySQL versions 5.6 - 8.0.

Before you can establish a connection from Symphony to MySQL storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To MySQL In Visual Data Discovery](#) for details specific to the MySQL connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	N
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A

Feature	Supported?
Nested Fields	N/A
Partitions	N
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	N

Connect to MySQL in Visual Data Discovery

The MySQL connector requires a JDBC driver to be configured before you can connect to your data source.

1. Download and install the version latest JDBC driver from <https://dev.mysql.com/downloads/connector/j/>. Instructions are provided on that website.
2. After installing the driver, edit the MySQL properties file and change the driver path and class name properties, as shown below and as described in [Add A JDBC Driver](#):

```
datasource.driver-config.class-name=com.mysql.cj.jdbc.Driver
datasource.driver-config.jar-path=<JDBC_driver_filepath>
```

3. Save the properties file and restart the connector. See [Add A JDBC Driver](#).

Connect to MySQL in Managed Dashboards

This applies to: *Managed Dashboards, Managed Reports*

This article provides details on using the MySQL data provider in a Symphony data connector. The MemSQL data provider is similar and relies on the same drivers.



Note: You can also use [ODBC](#) or [JDBC](#) drivers to connect to MySQL.



```
/usr/share/dundas/bi/Files/{Instance Name}/www/BIWebsite/App_Data/ExtensionsLib/netcore/MySQL.Data.dll
```

Data Connector Settings

Create a [new data connector](#) and set **Data Provider** to MemSQL Database or MySQL Database as appropriate.



more help

New Data Connector

A data connector lets you connect to your data through a provider.

Name

Data Connectors Root Folder/MySQL

Select a name...

Data Provider

MySQL Database

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Server Name

hostname

User Name

Dundas

Password

.....

Database

databasename

► Discovery

► Source



Set the remaining fields for the server, credentials, and database, and click to access additional options if needed from the expandable sections below. To see a description, hover over (or long-tap) one of the fields.



Note: When using tenant overrides to connect to different databases, expand the **Discovery** section and select **Single Schema** to discover and use database structures without prefixing the original database (schema) name in queries.



Note: If you are having connection issues, change the [Log Filter in the configuration settings](#) for **Standard Relational Data Providers** under **Extensions** (set to Verbose), then check for messages in the logs.

Connecting to ODBC

This applies to: *Managed Dashboards, Managed Reports*

The ODBC generic data provider option lets you connect to data sources that have an ODBC driver. Since there are third-party drivers available for a wide range of databases and other data sources, this means that Symphony has the ability to connect to more data sources out-of-the-box than we can list. You can often use an existing ODBC driver rather than rely on a [custom data provider](#).



Note: Only the 64-bit versions of the ODBC drivers are supported.

Here are some examples of data sources that have an ODBC driver:

- Adaptive Server (Sybase)
- Databricks
- Informix (IBM)
- Ingres
- MongoDB
- Pervasive PSQL (Pervasive)
- Proficy Historian (GE)
- QuickBooks
- SAS
- Spark SQL
- SPSS
- SQL Anywhere (Sybase)



Note: insightsoftware does not guarantee that any specific third-party ODBC driver will work properly with Symphony. If you encounter any connection issues with a specific driver, technical support.

When you or your organization have your own Symphony installation, run the ODBC driver installer or follow the instructions provided for the driver to install it on the computer(s) where Symphony is installed. If someone else is hosting your Symphony instance for you, you can check whether drivers have already been installed using the ODBC Driver drop-down shown below.

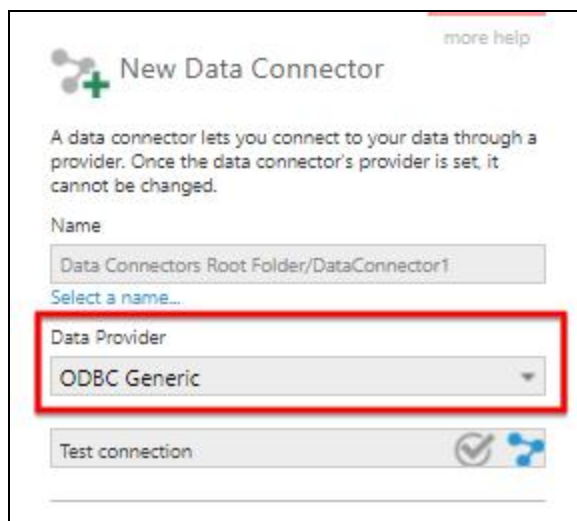
This topic contains the following sections:

- [Connect using ODBC](#)
- [Advanced options](#)
- [Data source name \(DSN\)](#)

Connect Using ODBC

With an ODBC driver installed, you can create a new data connector from the main menu to use it.

Enter a **Name** for the data connector, and then set the **Data Provider** drop-down to ODBC Generic.



The screenshot shows the 'New Data Connector' dialog box. At the top, there is a 'more help' link. Below it, a green plus icon is next to the title 'New Data Connector'. A descriptive text states: 'A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.' Below this, there is a 'Name' label and a text input field containing 'Data Connectors Root Folder/DataConnector1'. A link 'Select a name...' is visible below the name field. The 'Data Provider' dropdown menu is highlighted with a red rectangle and shows 'ODBC Generic' selected. At the bottom, there is a 'Test connection' button with a checkmark icon and a share icon.

Using a System DSN

If a [system DSN](#) has already been configured that you want to use, select **Use System DSN**.

Enter the **System DSN** or choose it from the drop-down that appears. Enter a **Password** if necessary.

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials

Use System DSN

☒

System DSN

Sonatica

Password

Advanced

Select structures

Check In

☒

Add a check in comment

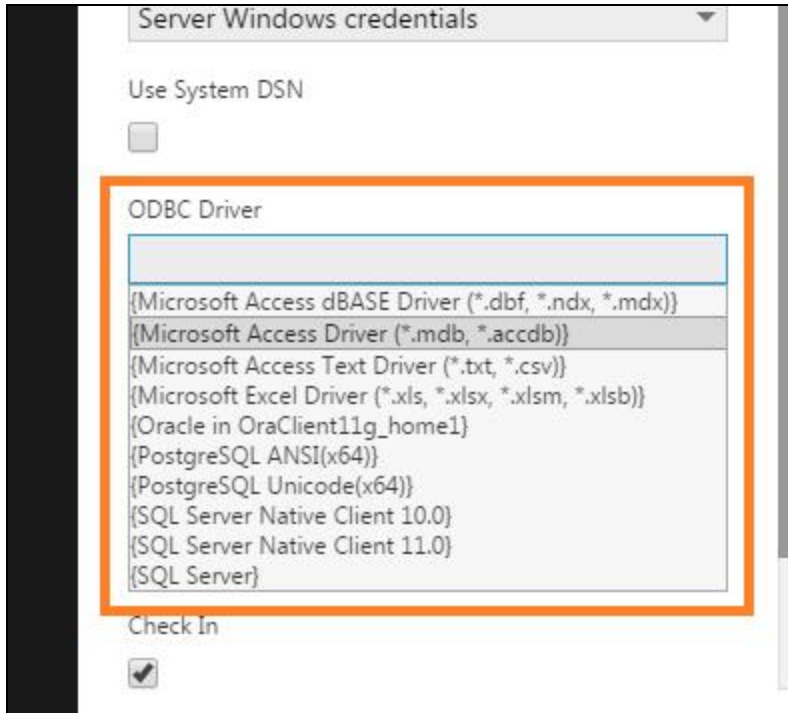
Optionally select **Test connection** above. In case of issues, see the [section below](#) for more information about DSN connections.

Select **Submit** at the bottom of the dialog when finished.

Without DSN

To enter most of the connection details yourself, you can leave the Use System DSN option unchecked.

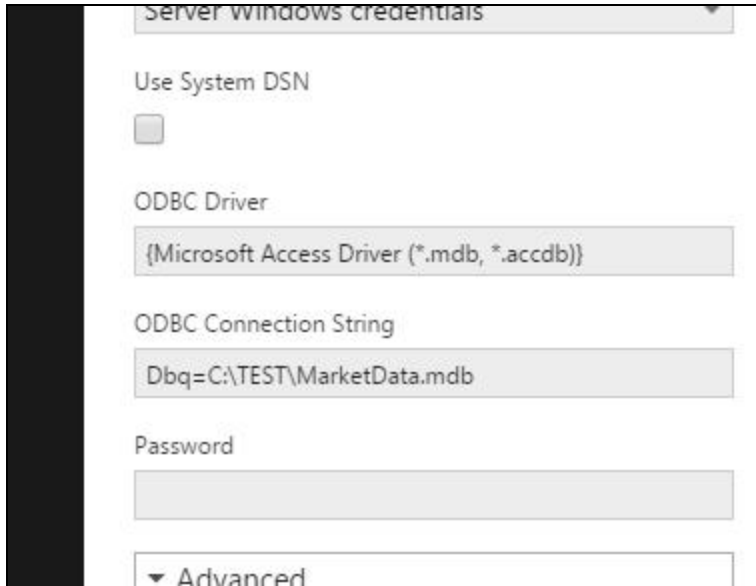
Click into the **ODBC Driver** textbox and choose from the drop-down listing the available drivers that are installed.



Enter the **ODBC Connection String**, usually consisting of one or more name-value pairs separated by semi-colons. The required information here is different depending on the specific driver/database and should be documented by the provider of the driver.

For example, you can use a connection string instead of a system DSN with the [MongoDB ODBC driver](#) for a [BI Connector in MongoDB Atlas](#) (the [system DSN steps](#) list other available parameters in the Linux tab):

```
UID=username;PORT=27015;DATABASE={databasename};SERVER={biconnector.etc.mongodb.net};
```



Optionally select **Test connection** above. Select **Submit** at the bottom of the dialog when finished.

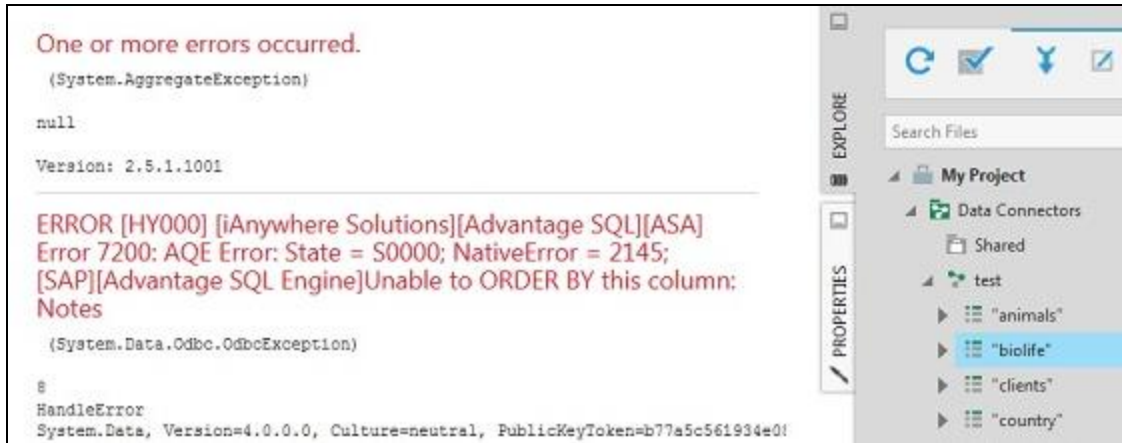
Advanced Options

Specify Driver Capabilities

Some ODBC drivers do not fully support SQL functionality such as joins. In other cases, an ODBC driver may report that it supports certain functionality when it really doesn't. To deal with these cases, you can specify yourself what SQL functionality from the ODBC driver to use. Doing so will help to avoid errors when you try to use the data connector to build metric sets and dashboards.

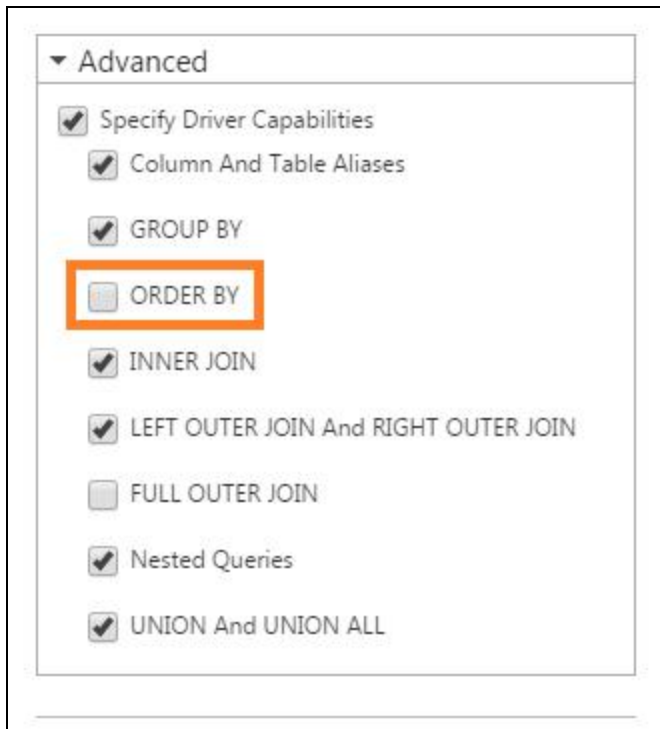
As an example, suppose you have created an ODBC data connector successfully. When dragging one of the discovered tables to the canvas, you see an error such as:

```
ERROR [HY000] [iAnywhere Solutions][Advantage SQL][ASA] Error 7200: AQE Error: State = S0000; NativeError = 2145; [SAP]
[Advantage SQL Engine]Unable to ORDER BY this column: Notes
```



The error message in this example indicates a problem with the use of `ORDER BY`.

To avoid this, edit the ODBC data connector. Expand **Advanced**, select **Specify Driver Capabilities** and uncheck **ORDER BY**.





- Archive of documentation for Logi Symphony v24

If you enable the Specify Driver Capabilities option but do not enable any of the capabilities, Symphony will perform all of the corresponding operations (other than selecting all data) in memory.



Password

▼ Advanced

☒ Specify Driver Capabilities

☐ Column And Table Aliases
 ☐ GROUP BY
 ☐ ORDER BY
 ☐ INNER JOIN
 ☐ LEFT OUTER JOIN And RIGHT OUTER JOIN
 ☐ FULL OUTER JOIN
 ☐ Nested Queries
 ☐ UNION And UNION ALL

Select Structures
 

Check In
 ☒

Add a check in comment



Data Source Name (DSN)

An ODBC Data Source Name (DSN) stores the information necessary to make a connection to a data source via ODBC, which can include the database name, driver, and credentials. Once a *System* DSN is created for a data source on the computer running Symphony, the computer's applications can use it, and you can select it from a drop-down when creating a Symphony data connector as shown [above](#).

In some cases, some information registered with a DSN may not be taken into account by the driver when testing or using it in Symphony, for example an error message may indicate the user name is missing or blank. If necessary, you can expand the **Advanced** section of the [data connector settings](#) and enter **Additional Connection Parameters** in a format similar to an ODBC connection string, such as `UID=MyUserName` to specify the username, and/or the data connector's dedicated **Password** field can be filled in. Alternatively, you can [uncheck the System DSN option](#) and enter all connection details required by the ODBC driver into the connection string.

DSN-less Connections

Symphony also lets you connect to ODBC data sources without using a system DSN. In this case, you must specify the connection information in the data connector according to the instructions of the driver provider.

An advantage of DSN-less connections is that they are not machine-specific and will still work if you transfer the data connector or your Symphony installation to another server provided that the driver is installed. On the other hand, setting up a DSN-less connection requires more knowledge about the ODBC driver.

Connecting to OData

This applies to: *Managed Dashboards, Managed Reports*

OData (or Open Data Protocol) is a REST-based data access protocol which was initially defined by Microsoft.

This article shows you how to connect to OData services such as Microsoft Azure Marketplace.

For a list of available services, see [OData - Live Services](#).

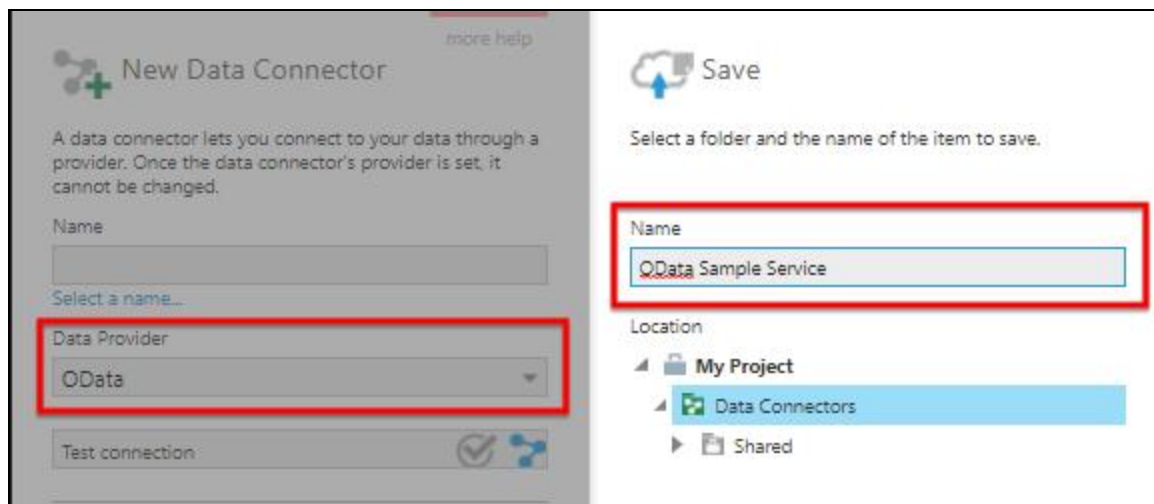
Connect to the OData Sample Service

Follow these steps to connect to a [sample test service](#) provided by odata.org.

Go to the main menu in Symphony and create a new data connector.

Select the **Name** box and enter a name for this connector (e.g., OData Sample Service).

Set the **Data Provider** drop-down to OData.

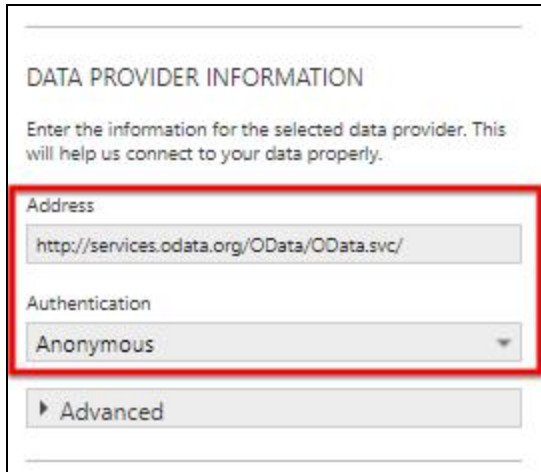


Set the **Address** to the service address, such as: `http://services.odata.org/OData/OData.svc/`



Note: Select the **Authentication** method. For this example, select `Anonymous`.

You can use the `Online Credentials` authentication method to connect to SharePoint Office 365.

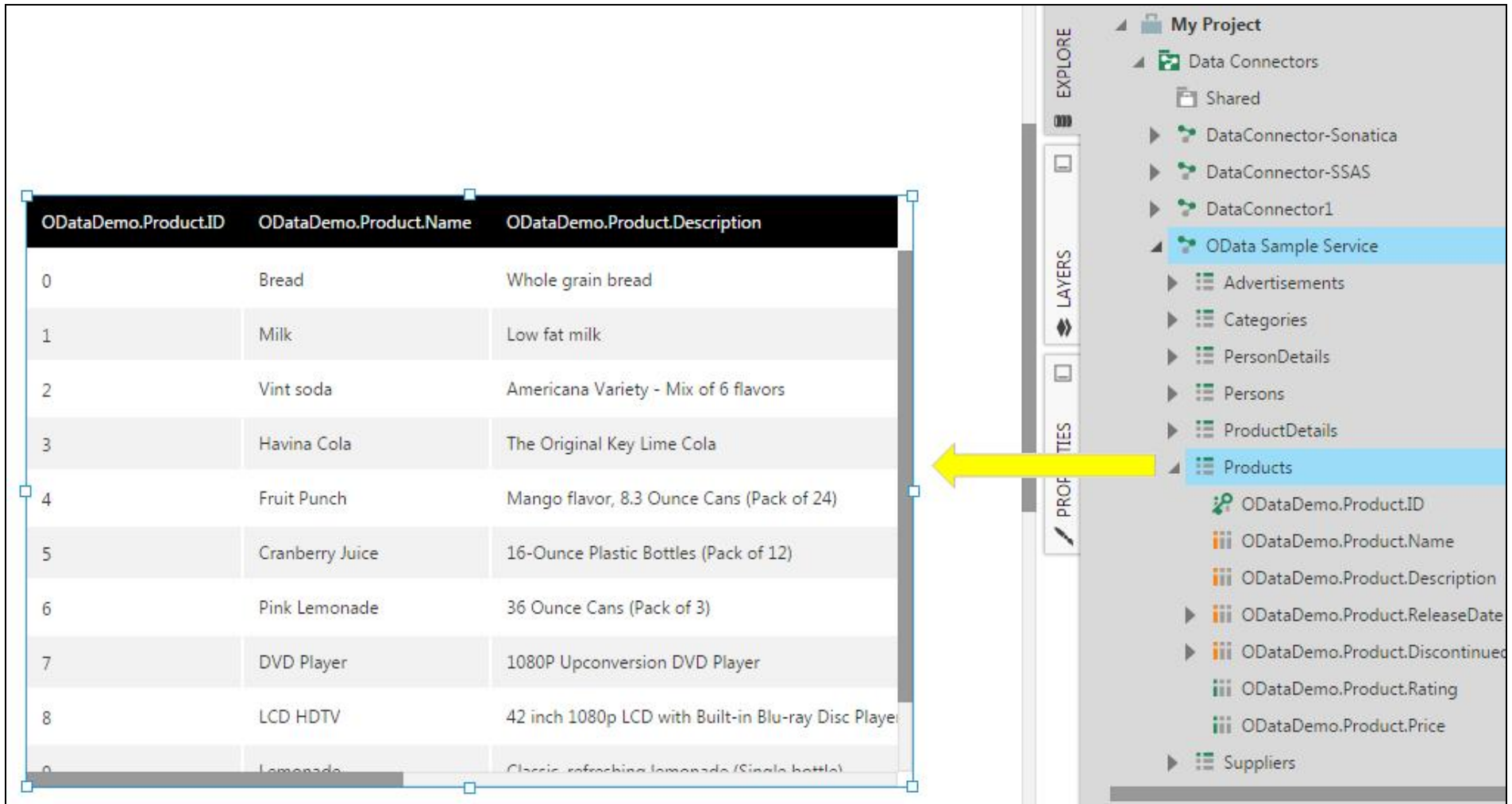
A screenshot of a web form titled "DATA PROVIDER INFORMATION". Below the title is a subtitle: "Enter the information for the selected data provider. This will help us connect to your data properly." The form contains three main sections: "Address" with a text input field containing "http://services.odata.org/OData/OData.svc/", "Authentication" with a dropdown menu set to "Anonymous", and an "Advanced" section with a right-pointing arrow. A red rectangular box highlights the "Address" and "Authentication" fields.

Select **Submit** to create the data connector and connect to the service.

To check the results, create a new dashboard from the main menu.

Expand the **Data Connectors** folder in the Explore window, then locate and expand your data connector.

Drag one of the OData tables to the dashboard canvas to see its data.



The screenshot displays the Logi Symphony interface. On the left, a data table is shown with the following columns: ODataDemo.Product.ID, ODataDemo.Product.Name, and ODataDemo.Product.Description. The table contains 10 rows of product data. On the right, a project explorer pane is visible, showing a hierarchy of data connectors and tables. A yellow arrow points from the 'Products' table in the explorer to the data table on the left.

ODataDemo.Product.ID	ODataDemo.Product.Name	ODataDemo.Product.Description
0	Bread	Whole grain bread
1	Milk	Low fat milk
2	Vint soda	Americana Variety - Mix of 6 flavors
3	Havina Cola	The Original Key Lime Cola
4	Fruit Punch	Mango flavor, 8.3 Ounce Cans (Pack of 24)
5	Cranberry Juice	16-Ounce Plastic Bottles (Pack of 12)
6	Pink Lemonade	36 Ounce Cans (Pack of 3)
7	DVD Player	1080P Upconversion DVD Player
8	LCD HDTV	42 inch 1080p LCD with Built-in Blu-ray Disc Player
9	Lemonade	Classic, refreshing lemonade (Single bottle)

The project explorer on the right shows the following structure:

- My Project
 - Data Connectors
 - Shared
 - DataConnector-Sonatica
 - DataConnector-SSAS
 - DataConnector1
 - OData Sample Service
 - Advertisements
 - Categories
 - PersonDetails
 - Persons
 - ProductDetails
 - Products (highlighted)
 - ODataDemo.Product.ID
 - ODataDemo.Product.Name
 - ODataDemo.Product.Description
 - ODataDemo.Product.ReleaseDate
 - ODataDemo.Product.Discontinued
 - ODataDemo.Product.Rating
 - ODataDemo.Product.Price
 - Suppliers

Connect to SharePoint

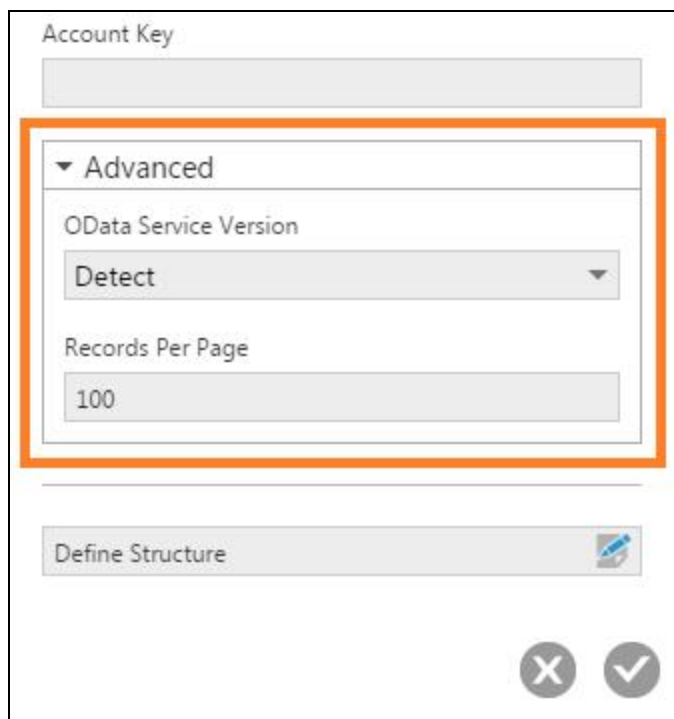
You can also connect to data on your SharePoint server using the OData protocol.

For example, set the **Address** to `http://spserver/_vti_bin/listdata.svc/` and the **Authentication** method to `Specified Windows credentials`.

Advanced Properties

By default, the OData connector will auto-detect the OData version, but you can use the **OData Service Version** option to force a specific version (e.g., between V1 and V4).

The **Records Per Page** option specifies the number of records or rows to fetch at a time. By default, it is set to 100 but you can increase this in order to load data faster.



Account Key

Advanced

OData Service Version

Detect

Records Per Page

100

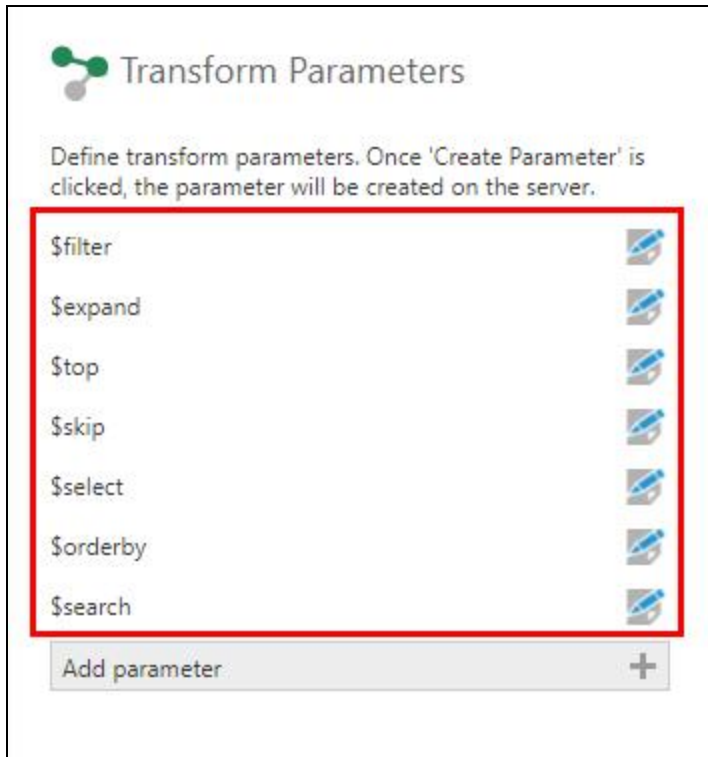
Define Structure

X ✓

Using Query Options

Queries sent to the data source can include various options that you can set, including `$filter`, `$expand`, `$top`, `$skip`, `$select`, `$orderby`, and (when using OData version 4) `$search`.

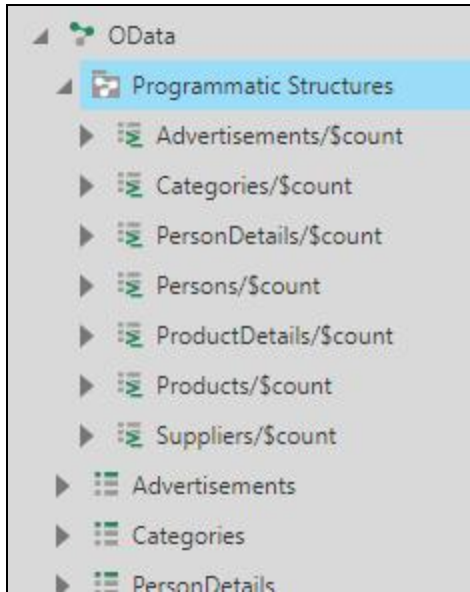
These can be set when selecting a table in a data cube, by configuring its [Tabular Select](#) transform and selecting **Parameters**.



Click to edit one of the predefined parameters, and set the **Value** using the syntax used by [OData query options](#) following the equal (=) sign.

For example, the `$filter` parameter could be set to `IataCode eq 'LAX'`.

You will also find a `Programmatic Structures` folder located directly under the data connector, listing the results of the `$count` query option for each table, which you can drag onto a data cube or metric set.





Connecting to Pardot

This applies to: *Managed Dashboards, Managed Reports*

Access Pardot data using a data connector in Symphony.

Set Up Pardot

You may need to first set up a connected app and enable access to Pardot services in order to obtain details such as the Consumer Key and Consumer Secret that you will need when creating a Symphony data connector.

For details, see [Setting Up Salesforce OAuth for Pardot API Authentication](#).

Create the Data Connector

When [creating a new data connector](#), set the **Data Provider** drop-down to `Pardot`.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is saved, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Pardot

Test connection 

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

User E-Mail

Password

Security Token

Consumer Key

Consumer Secret

Business Unit ID



- Archive of documentation for Logi Symphony v24

Enter the **User E-mail**, **Password**, and **Security Token** for your Salesforce account with Pardot login rights. If you do not already have a security token to provide, you can [reset your security token](#) in order to obtain it by email or use your authenticator app.

Enter other details such as the **Consumer Key** and **Consumer Secret** from your connected app and Pardot account, detailed in the link provided in the section above.

You can choose between the Pardot v3 and v4 APIs by expanding the **Advanced** section and setting the **API Version**.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)



- Archive of documentation for Logi Symphony v24

Connecting to SharePoint Lists and Excel Services

This applies to: *Managed Dashboards, Managed Reports*

Use Symphony to create a data connector for SharePoint and Microsoft 365 Lists and for SharePoint Excel Services.

Connect to a SharePoint List

When [creating a new data connector](#), set the Data **Provider drop-down** to the SharePoint List option that corresponds with your SharePoint site as follows.

SharePoint Lists

Choose `SharePoint Lists` for an on-premise SharePoint server or when using basic authentication in SharePoint Online.

Choose an [authentication method](#). You will typically need to use specified or impersonated Windows credentials, or for SharePoint Online use *Online credentials* (this account should not use multi-factor authentication, or you can use the [SharePoint Online List provider](#) instead).

Next, set the **SharePoint Site URL**.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

SharePoint Lists

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Specified Windows credentials

Domain

Username

Password

Relay Credentials

☐

SharePoint Site URL

Define structure 

Check In

☒



SharePoint Online List

Set **Data Provider** to `SharePoint Online List` to use modern authentication options with SharePoint Online. This requires setup by an Office 365 admin user:

- Accessing SharePoint Online requires [using a X.509 certificate to authenticate](#), which you will need to create first.
- From the [Azure Portal](#), [register an Azure Active Directory \(AD\) app](#). Configure **API permissions** to grant `Sites.Read.All`, and go to **Certificates & secrets** to upload your certificate. Additional details are available [here](#).

You can also follow a more detailed walkthrough that includes examples for creating a self-signed certificate and registering it along with SharePoint API permissions as part of [Granting access via Azure AD App-Only](#) in the SharePoint documentation.

In the Symphony data connector, enter the **Application ID** and **Directory ID** which can be found on the overview page of the Azure AD App, then under **Certificate** upload the X.509 certificate and enter the accompanying **Certificate Password** used when creating it. Enter the **SharePoint URL** for the site you want to access lists from.

Connect to SharePoint Excel Services

Excel Services is a service application that enables you to load and display live Microsoft Excel workbook data from on-premise SharePoint servers.



Note: To connect to live Excel data from SharePoint Online, consider [syncing those files to a folder](#) or other location accessible to the Symphony server so you can use the [Microsoft Excel data provider](#).

The following walkthrough shows you how to connect to an Excel file in SharePoint using the Excel Services provider. If you are not sure whether Excel Services is enabled on your SharePoint server, contact your SharePoint administrator.

First, create a new data connector from the main menu, then set a **Name** for it and set the **Data Provider** drop-down to `SharePoint Excel Services`.

Choose an [authentication method](#). You will typically need to use `Specified Windows credentials`, or for SharePoint Online (e.g., Office 365) use `Online credentials`, and then enter the credentials.

Next, set the **SharePoint Site URL** and **Excel File Name**.



New Data Connector

more help

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

Data Connectors Root Folder/DataConnector1

[Select a name...](#)

Data Provider

SharePoint Excel Services

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Specified Windows credentials

Domain

EXAMPLE

Username

bobt

Password

Relay Credentials

☐

SharePoint Site URL

http://spserver

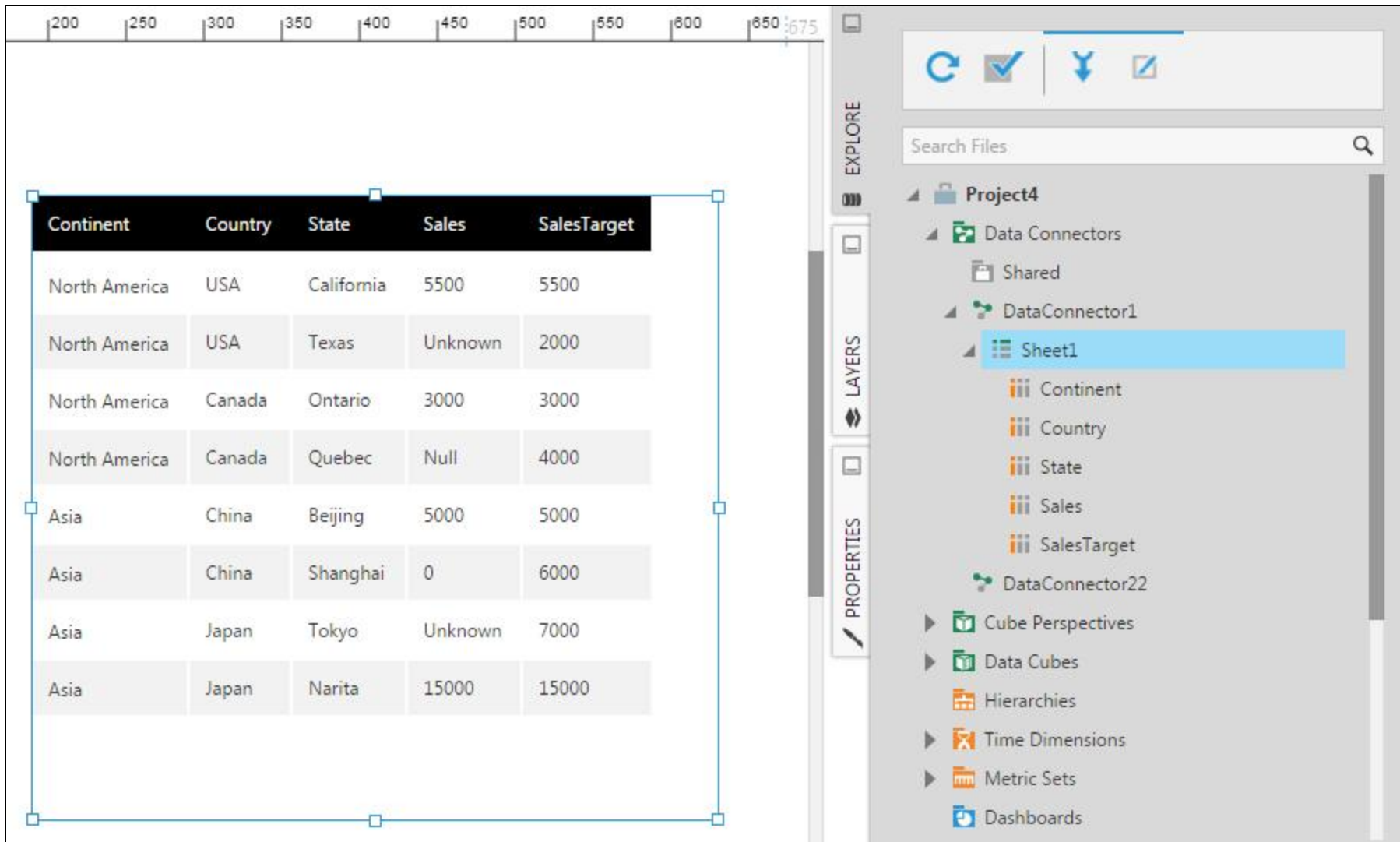
Excel File Name

Sharepoint Documents/calendario.xlsx

Select the submit button at the bottom of the dialog to begin discovering the available data. If you encounter a connection error such as *We noticed that you haven't been interacting with this workbook, so we paused your session* try selecting the **Relay Credentials** option in your settings.

Now you can access the data in a new metric set or in a view such as a dashboard.

Locate and expand the data connector in the **Explore** window to see the discovered sheets and drag one to the canvas to see its data.



The screenshot displays the Logi Symphony interface. On the left, a data table is visualized on a canvas. The table has five columns: Continent, Country, State, Sales, and SalesTarget. The data is organized into three groups based on the 'Continent' column: North America, Asia, and Japan. The 'Sales' column contains values such as 5500, Unknown, 3000, Null, 5000, 0, Unknown, and 15000. The 'SalesTarget' column contains values such as 5500, 2000, 3000, 4000, 5000, 6000, 7000, and 15000.

On the right side of the interface is the **EXPLORE** window. It features a search bar labeled 'Search Files'. Below the search bar, a tree view shows the hierarchy of data connectors. The 'Project4' folder is expanded, revealing 'Data Connectors'. Under 'Data Connectors', 'DataConnector1' is expanded, showing 'Sheet1' selected. Below 'Sheet1', the following fields are listed: Continent, Country, State, Sales, and SalesTarget. Other data connectors like 'DataConnector22' are also visible. At the bottom of the Explore window, there are sections for 'Cube Perspectives', 'Data Cubes', 'Hierarchies', 'Time Dimensions', 'Metric Sets', and 'Dashboards'.

Continent	Country	State	Sales	SalesTarget
North America	USA	California	5500	5500
North America	USA	Texas	Unknown	2000
North America	Canada	Ontario	3000	3000
North America	Canada	Quebec	Null	4000
Asia	China	Beijing	5000	5000
Asia	China	Shanghai	0	6000
Asia	Japan	Tokyo	Unknown	7000
Asia	Japan	Narita	15000	15000



Define Structure

You may want to define, or modify, the data structure for the created data connector. For example, you can change the data type of a column.

When editing the data connector, select **Define structure**. The steps are similar to connecting to a regular [Excel file](#).



Manage the Snowflake Connector

This applies to: *Visual Data Discovery*

The Symphony Snowflake connector lets you access the data available in Snowflake storage using the Symphony client. The Symphony Snowflake connector supports whatever Snowflake version is currently available in the cloud.

Before you can establish a connection from Symphony to Snowflake storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To Snowflake For Visual Data Discovery](#) for details specific to the Snowflake connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A



Feature	Supported?
Nested Fields	N/A
Partitions	N
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y

Connect to Snowflake for Visual Data Discovery

The version 3.12.11 JDBC driver is included with the Snowflake connector, but you can download a newer version from <https://repo1.maven.org/maven2/net/snowflake/snowflake-jdbc/>. See [Add A JDBC Driver](#).

When setting up a connection to Snowflake, you need to provide the following:

- The name of the connection
- The JDBC URL.
- Each Snowflake connection must be associated with a database. It may be the database specified in the JDBC URL or the default data base of the connecting user (when no database is specified in the JDBC URL).
- The username and password. Only simple username and password authentication is supported.

Snowflake officially supports each of its client versions for a minimum of two years: <https://docs.snowflake.net/manuals/release-notes/requirements.html#support-policy>. If the JDBC driver is not updated for two years, the Snowflake connector may stop working. Symphony regularly updates the JDBC driver, however if you do not update your Snowflake connector for a long time, you may encounter problems. If this happens, you can manually update the JDBC driver yourself. Symphony provides it in `/opt/zoomdata/lib/edc-snowflake` for Linux, and `<install-path>/lib/edc-snowflake` for Windows environments.

Snowflake Time Field Conversion

The Symphony Snowflake connector converts date-time fields with data types of `TIMESTAMP_TZ` (a Snowflake data type) to Coordinated Universal Time (UTC) format. The connector also sets the session timezone to UTC format, which means that all Snowflake fields that use the Snowflake local timezone data type `TIMESTAMP_LTZ` are also converted to UTC format.

Configure the Snowflake Clustering Depth Threshold

Snowflake does not have an index, but supports micro-partitions and clustering keys instead. It uses a clustering depth for a table column to indicate whether the clustering state of the column has improved or deteriorated as a result of data changes in the table. A value of 1.0 for the clustering depth indicates that the column is fully clustered. A higher clustering depth indicates that the Snowflake table is not optimally clustered. See [Understanding Snowflake Table Structures](#).

To define playability of date or numeric fields, the Symphony Snowflake connector uses the relative clustering depth of these fields in relation to the total number of partitions in the table, computed as a percentage using the following formula:

```
AverageClusteringDepth / MAX(TotalPartitionCount, 100) * 100
```

If the relative clustering depth of a field is equal to or less than a set threshold value, it is considered to be playable. The default clustering depth threshold is 10%, but can be changed by changing the following Snowflake configuration property in the Snowflake properties file (`edc-snowflake.properties`):

```
snowflake.metadata-detection.fast-range-queries.max-clustering-depth-percent=<nnn>
```

See [Connector Properties And Property Files](#).

The clustering depth threshold allows Symphony to enable playback and live mode for all fields that are optimally clustered and disable it for all fields that are not. Adjust the threshold value or recluster your Snowflake tables to better handle intermediate cases.

Connect to Snowflake Using OAuth

To create a Snowflake connection use one of the available authentication methods:

- Basic authentication via username and password
- OAuth 2.0

If connecting using basic authentication, provide:

- The name of the connection.
- The JDBC URL.
- Each Snowflake connection you use must be associated with a database.
 - The database can be the one specified in the JDBC URL, or
 - The default database of the connecting user (if no database is specified in the JDBC URL).
- The username and password. Only simple username and password authentication is supported.

For connecting via OAuth 2.0, fill in the specific parameters:

JDBC URL	
OAuth 2.0 Enabled	TRUE/FALSE
OAuth 2.0 Authorization URI	Obtain OAuth 2.0 connection parameters from your Snowflake instance for connection.
OAuth 2.0 Token URI	
OAuth 2.0 Client Id	
OAuth 2.0 Client Secret	



Note: Scheduled source refresh is not available when you use OAuth 2.0 authentication.



Note: If you do not want to expose OAuth 2.0 connection options to your customers, disable OAuth-related connection parameters at the connector level as a member of the Supervisors group.

Connecting to Snowflake in Managed Dashboards

This applies to: *Managed Dashboards, Managed Reports*

Use a data connector to connect to a Snowflake cloud data source.



Note: This requires a snowflake cloud database, for more information visit: <https://www.snowflake.com>.



- Archive of documentation for Logi Symphony v24

Data Connector Settings

Create a [new data connector](#) and set **Data Provider** to `Snowflake Database`.

You will need to enter the **Host URL**, **User Name**, **Password**, and **Database** for Snowflake.



New Data Connector

[more help](#)

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Snowflake Database

Test connection



DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Host URL

User Name

Password

Database

▶ Advanced





- Archive of documentation for Logi Symphony v24

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [Connecting to ODBC](#)
- [Selecting Structures For Data Connector Discovery](#)



Connecting to SSAS

This applies to: *Managed Dashboards, Managed Reports*

Several options are available when connecting to Microsoft SQL Server Analysis Services (SSAS) including Azure Analysis Services. You can also filter data by user.

Connect to Analysis Services

See [Connect to OLAP data and apply a formula](#) for a walkthrough on creating and using a data connector for Analysis Services or other OLAP databases.

After setting the **Data Provider** drop-down of a data connector to `Microsoft SQL Server Analysis Services`, there are three options for the **Windows Impersonation** field:

- The `Server` option is applicable if the user account running the Symphony application pool in IIS has the appropriate access to the SSAS server.
- Choose `Active Directory Password` to enter the credentials to use for connecting using Azure Active Directory.
- Otherwise, use the `Specified` option and enter the Windows domain credentials of a user that has access to SSAS.



New Data Connector

more help

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

Data Connectors Root Folder/DataConnector1

Select a name...

Data Provider

Microsoft SQL Server Analysis Services

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Windows Impersonation

Specified

Domain

EXAMPLE

Username

tomg

Password

Relay Credentials

Server Name

SERVER1

Database Name

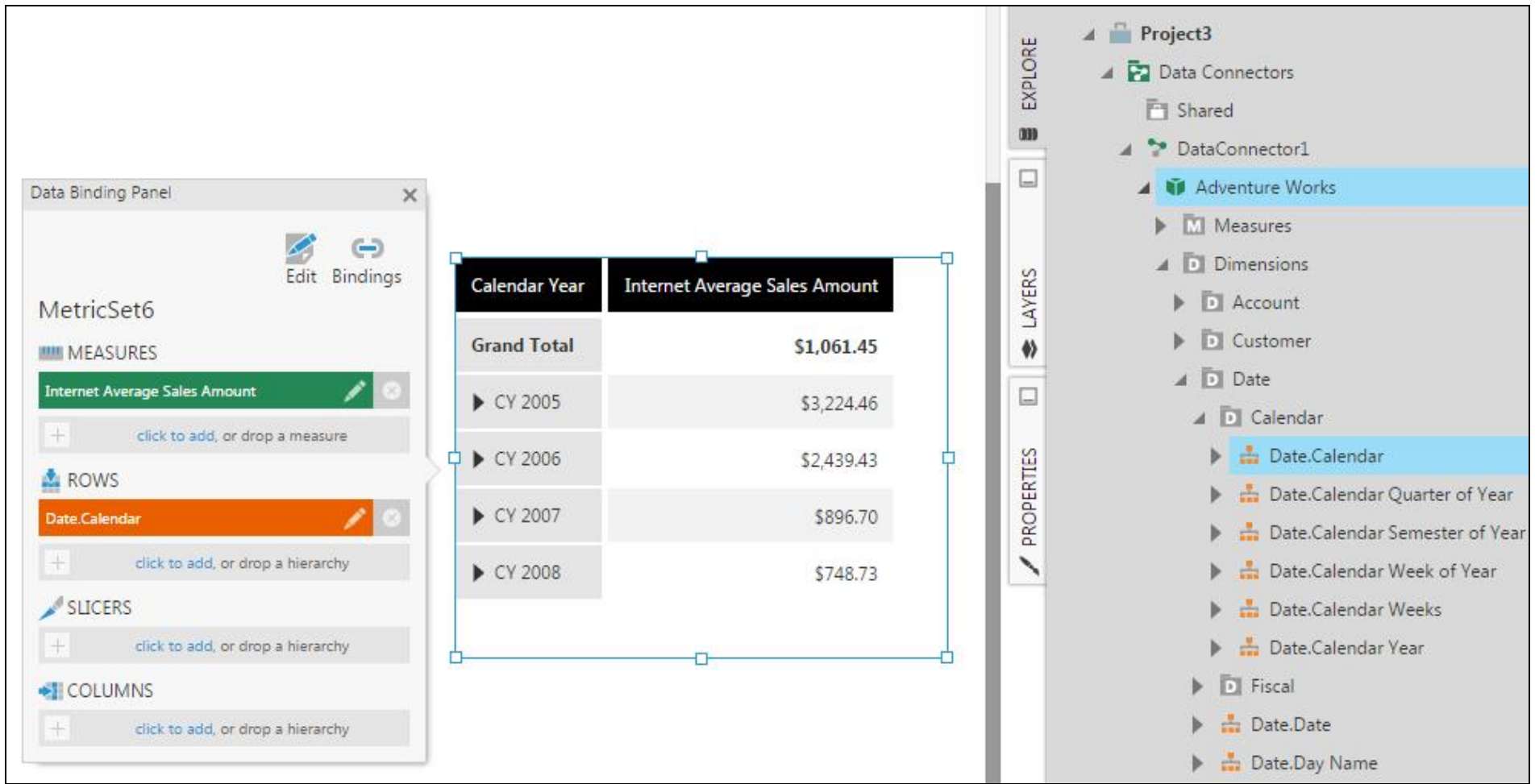
Adventure Works DW

The **Impersonation** setting has options detailed in the following sections.

Impersonation = None

This option is the default way to connect to SSAS, so you can leave the **Impersonation** field set to **None**.

This means the credentials that are specified in your data connector settings will be passed directly to the SSAS server. Every user who logs on and views dashboards based on this data connector is going to see the same data (because the same underlying Windows credentials are being used to connect to SSAS). So there is no real filtering by user possible with this option.



The screenshot displays the Logi Symphony interface. On the left, the 'Data Binding Panel' is open, showing the 'MetricSet6' configuration. It includes sections for MEASURES, ROWS, SLICERS, and COLUMNS. The 'Internet Average Sales Amount' measure is selected under MEASURES, and 'Date.Calendar' is selected under ROWS. The main area shows a pivot table with 'Calendar Year' as the column header and 'Internet Average Sales Amount' as the row header. The table data is as follows:

Calendar Year	Internet Average Sales Amount
Grand Total	\$1,061.45
▶ CY 2005	\$3,224.46
▶ CY 2006	\$2,439.43
▶ CY 2007	\$896.70
▶ CY 2008	\$748.73

On the right, the 'EXPLORE' pane shows a tree view of the data source 'Project3'. The tree structure is as follows:

- Project3
 - Data Connectors
 - Shared
 - DataConnector1
 - Adventure Works
 - Measures
 - Dimensions
 - Account
 - Customer
 - Date
 - Calendar
 - Date.Calendar (selected)
 - Date.Calendar Quarter of Year
 - Date.Calendar Semester of Year
 - Date.Calendar Week of Year
 - Date.Calendar Weeks
 - Date.Calendar Year
 - Fiscal
 - Date.Date
 - Date.Day Name



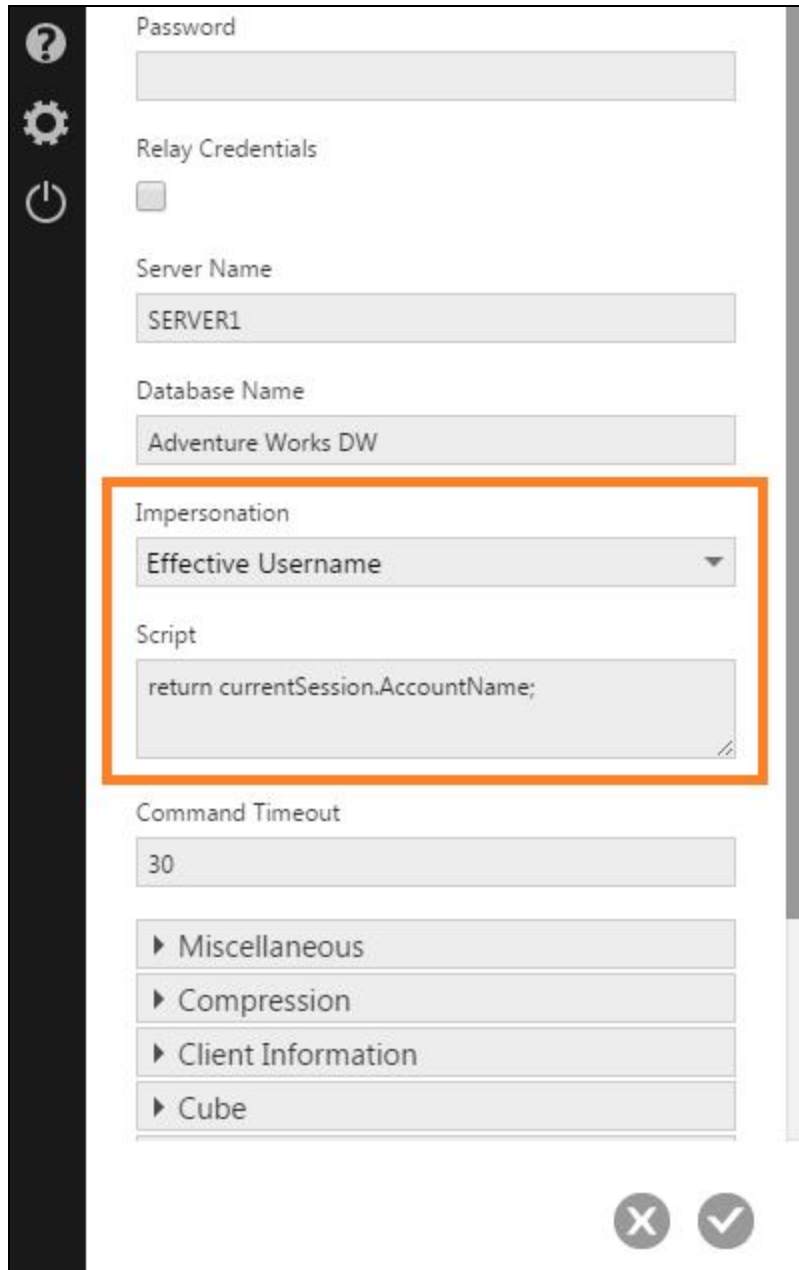
Impersonation = Effective Username

This option is designed to work in conjunction with Windows logon and Windows accounts in Symphony. The Windows username of the current Symphony user (e.g., a user viewing a dashboard) is passed to the SSAS server, where security settings that have been set up will take effect for each Windows user.

Technically, what happens is that the current Windows username is passed via the **EffectiveUserName** property of the SSAS connection string.

Follow these steps to use the effective username option:

1. Set up security on the SSAS server for each Windows user.
2. Make sure Windows logon is enabled in Symphony via the **Log On Modes** [configuration setting](#).
3. Add Windows accounts in Symphony.
4. In the *New Data Connector* dialog, set **Windows Impersonation** to *Specified* and enter the domain credentials for a user which has admin rights on the SSAS server.
5. Set the **Impersonation** field to *Effective Username*.



?
 ⚙️
 🔌

Password

Relay Credentials
☐

Server Name

Database Name

Impersonation

Script

Command Timeout

▶ Miscellaneous
 ▶ Compression
 ▶ Client Information
 ▶ Cube

✕ ✓

The effective username option is easy to set up and use because it leverages existing cube security.



Impersonation = Roles

This option uses `roles` in SSAS to define security in the cube. In Symphony, user [groups](#) are created that mirror the names of the roles in the cube. Users in Symphony get added to one or more user groups, thus linking them to roles in the cube.

Roles impersonation allows you to control access to cube data on a per-user basis within Symphony based on which group that user's account is assigned to. Users will see different data displayed on dashboards, for example, depending on the Symphony user group (and corresponding SSAS role) they belong to.

The advantage of this option is that it works with all Symphony account types and leverages existing roles defined in your cube.

See [Using SSAS roles impersonation](#) for details on using this option.

Custom Data and Custom Attributes

An alternative to roles impersonation is to use the **Custom Data** property of SSAS data connectors in conjunction with custom attributes to secure access to the data. This method requires only one role on the SSAS side and allows you to manage data security using just the Symphony admin interface. Custom attributes are name-value pairs of information which Symphony administrators can assign on a per-user account or per-group basis.

See [Using a Security Hierarchy to Filter SSAS Data by User](#) for details on setting up this option.

Localization

Use the **Locale Identifier** field to specify the preferred locale ID. You can either indicate a static locale ID or use script to determine the appropriate ID to use.

For example, to match the data connector locale to the locale of the logon session, type the following script into the **Locale Identifier** field:

```
return currentSession.Culture.LCID;
```

▼ Miscellaneous

Character Encoding

Custom Data

String.Join(", ", attributeValues); }
// else { return String.Empty; }

Locale Identifier

return currentSession.Culture.LCID;

Packet Size

4096

Protocol Format

Default

Connection Timeout

0

For more information, see:

- [Set Up Date Mapping on a Native OLAP Cube](#)
- [Using SSAS Roles Impersonation](#)
- [Using Custom Data and Custom Attributes to Filter SSAS Sata](#)
- [Using a Security Hierarchy to Filter SSAS Data by User](#)
- [SSAS Data Connection Issues](#)
- [Configuration Settings](#)



Using SSAS Roles Impersonation

This applies to: *Managed Dashboards, Managed Reports*

SQL Server Analysis Services (SSAS) relies on Windows authentication and roles to determine user permissions. When you create a new data connector using the SSAS data provider, you have the option of connecting using *Roles Impersonation*, which allows you to control access to cube data on a per-user basis. Users will see different data displayed on dashboards, for example, depending on the Symphony user group (and corresponding SSAS role) they belong to.

The idea behind roles impersonation is simple and basically consists of three parts:

- Set up roles in SSAS and restrict access to data accordingly for each role.
- Create user groups in Symphony that correspond exactly to the SSAS roles.
- Connect to SSAS using the Roles impersonation option.

For more information about SSAS roles, see [Roles and Permissions \(Analysis Services\)](#) in Microsoft's documentation.

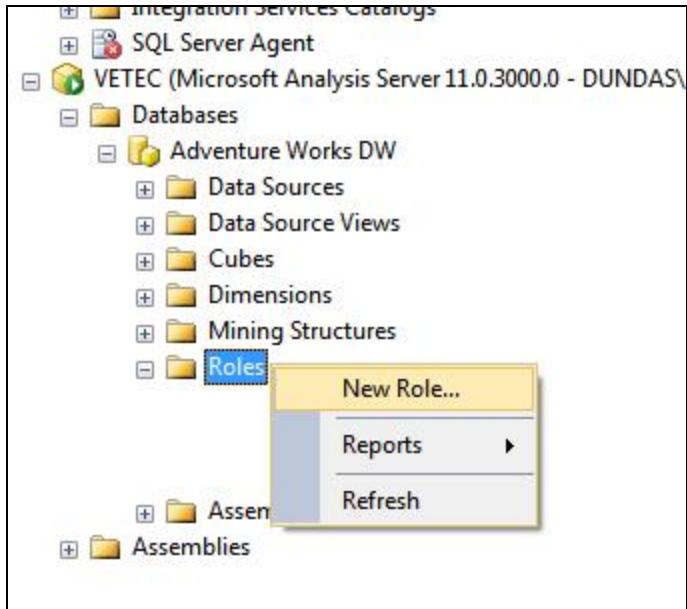
This topic contains the following sections:

- [Set Up Roles in SSAS](#)
- [Set Up User Groups and Accounts in Symphony](#)
- [Create a New Project and Dashboard](#)
- [View the Dashboard as Each User](#)

Set Up Roles in SSAS

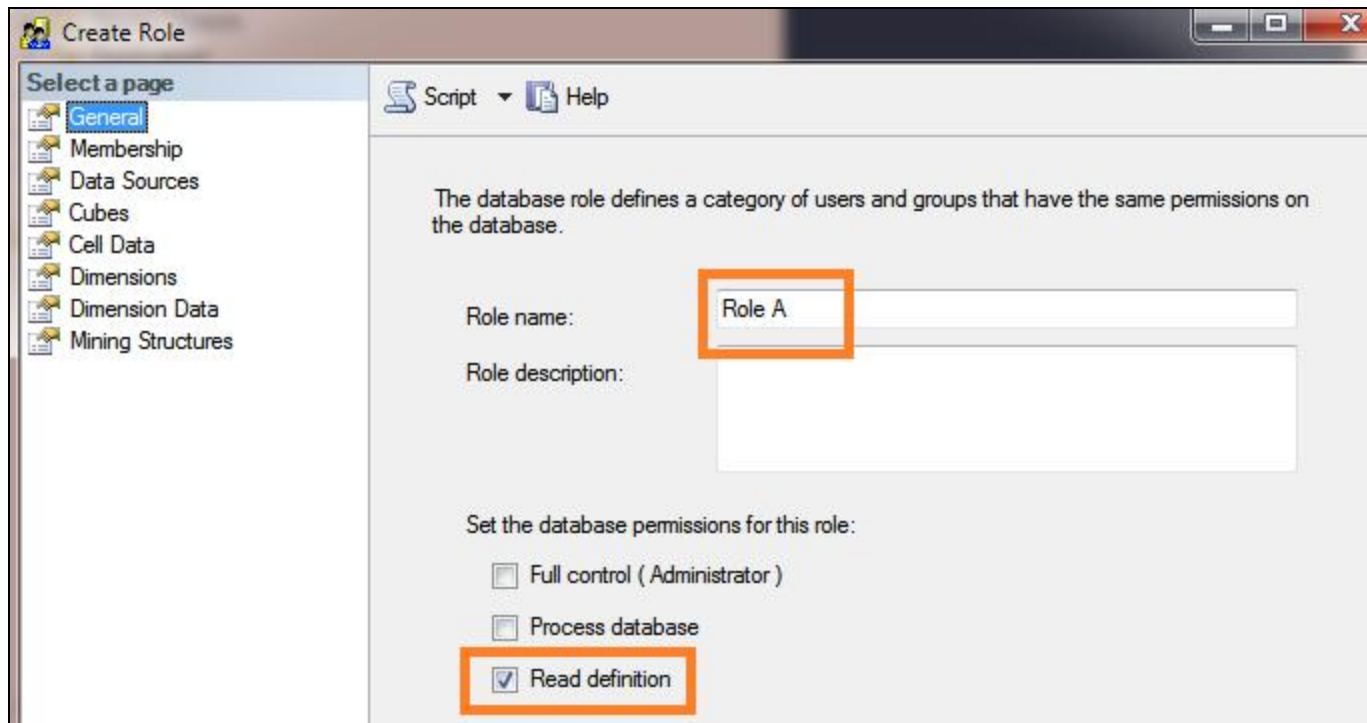
Launch SQL Server Management Studio and connect to Analysis Services.

Expand your SSAS database and right-click on the **Roles** folder. From the menu, select **New Role**.



In the **General** page of the Create Role dialog, set the following fields:

- Role name: *Role A*
- Set the database permissions for this role: *Read definition*



Create Role

Select a page: General, Membership, Data Sources, Cubes, Cell Data, Dimensions, Dimension Data, Mining Structures

Script Help

The database role defines a category of users and groups that have the same permissions on the database.

Role name:

Role description:

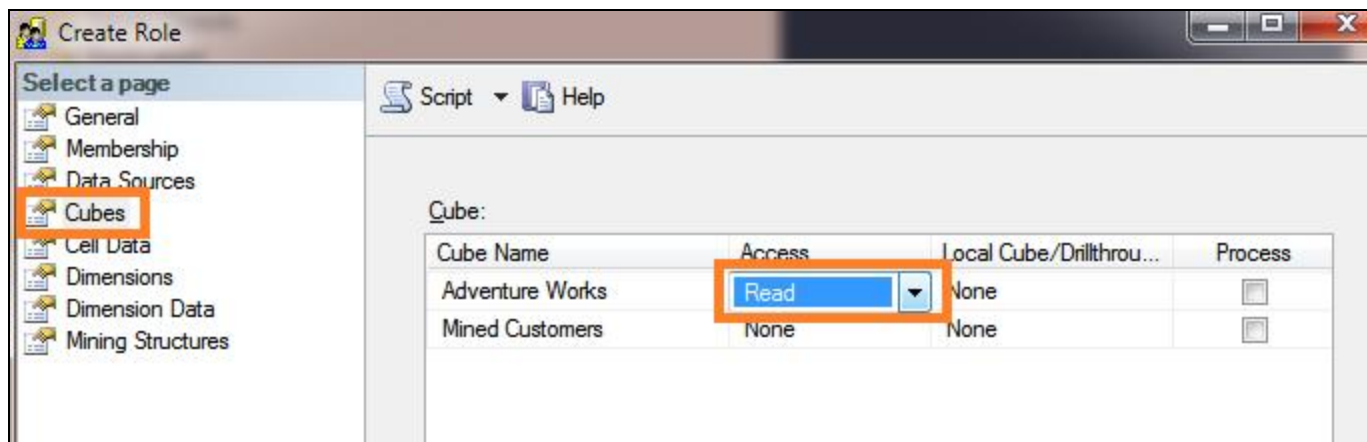
Set the database permissions for this role:

☐ Full control (Administrator)

☐ Process database

☒ Read definition

Go to the **Cubes** page of the Create Role dialog and give read-access to a specific cube.



Create Role

Select a page: General, Membership, Data Sources, Cubes, Cell Data, Dimensions, Dimension Data, Mining Structures

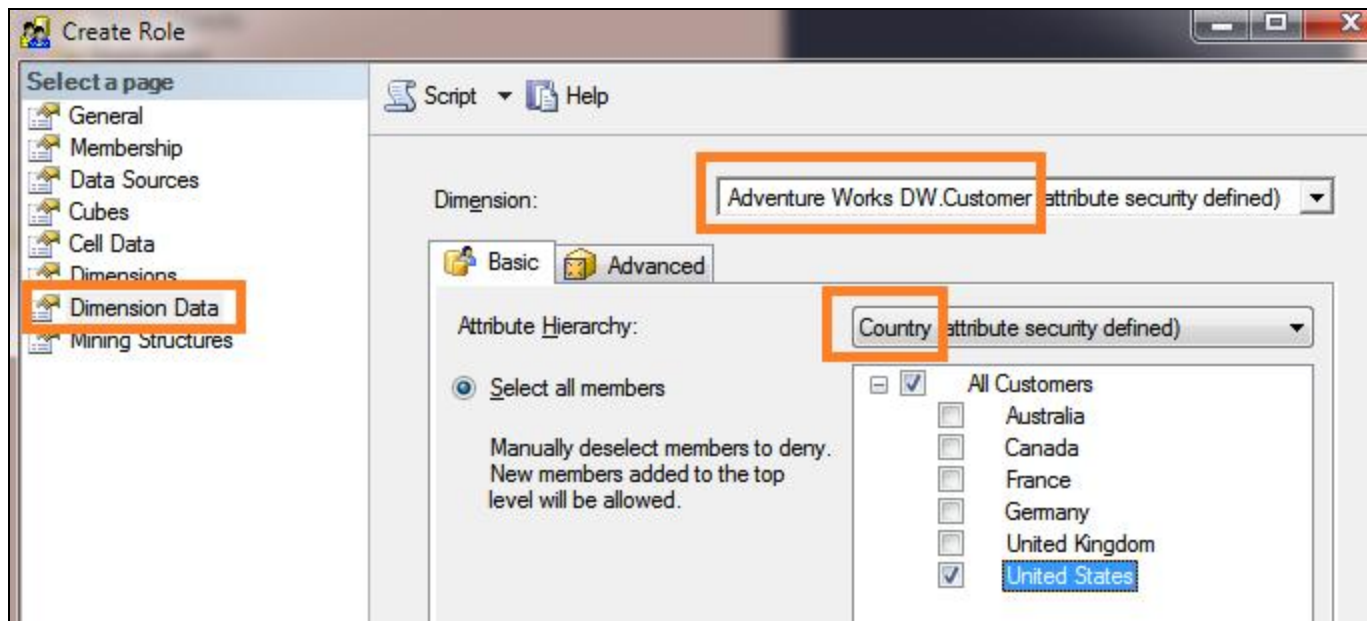
Script Help

Cube:

Cube Name	Access	Local Cube/Drillthrou...	Process
Adventure Works	Read	None	☐
Mined Customers	None	None	☐

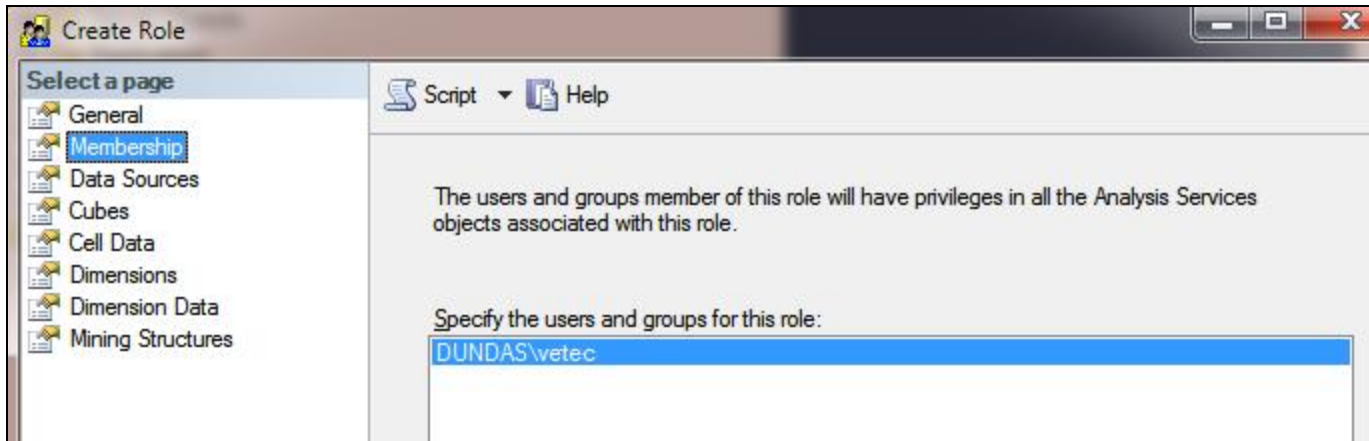
In the **Dimension Data** page, restrict access to cube data for this role. For example:

- Select the `Customer` dimension.
- Select the `Country` attribute hierarchy.
- Uncheck all members except `United States`.



Note: When using role impersonation on a native OLAP cube, the user will see the totals for `All` the members in the cube. If you want the totals to be the aggregate for only the visible cell values, open the **Advanced** tab in the **Dimension Data** page and enable the **Enable Visual Totals** option.

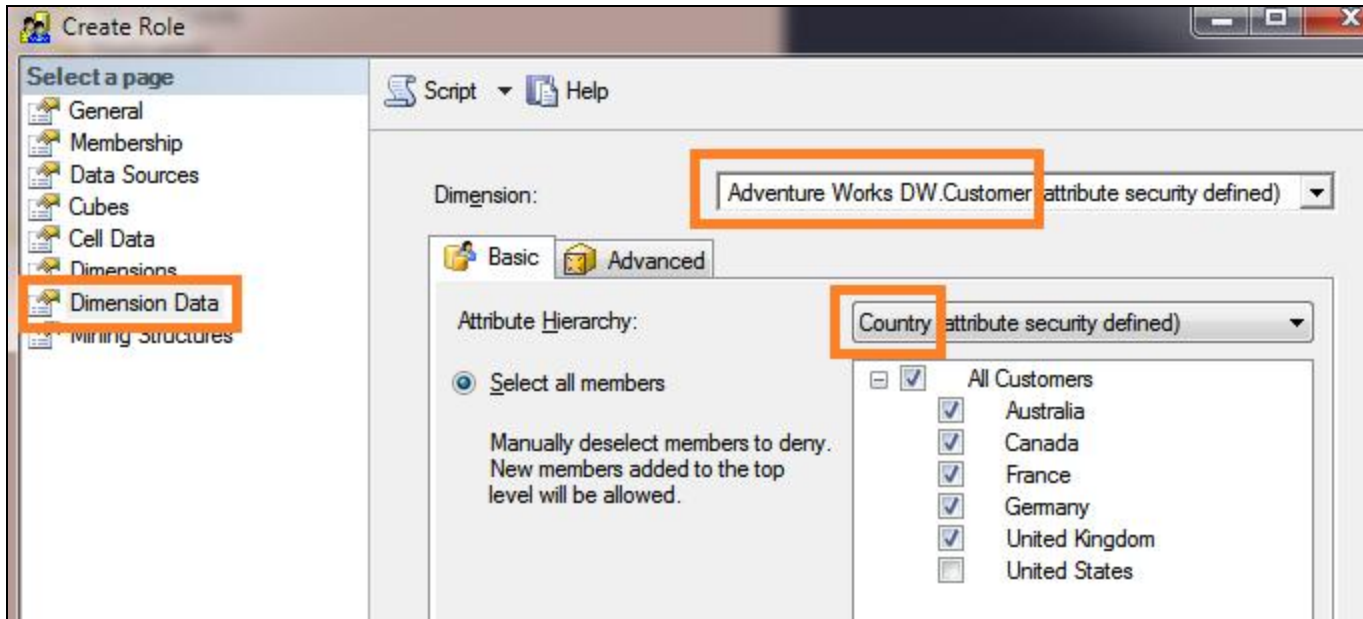
In the **Membership** page, add a domain user to the role. This will be the Windows credentials needed when creating the data connector in Symphony.



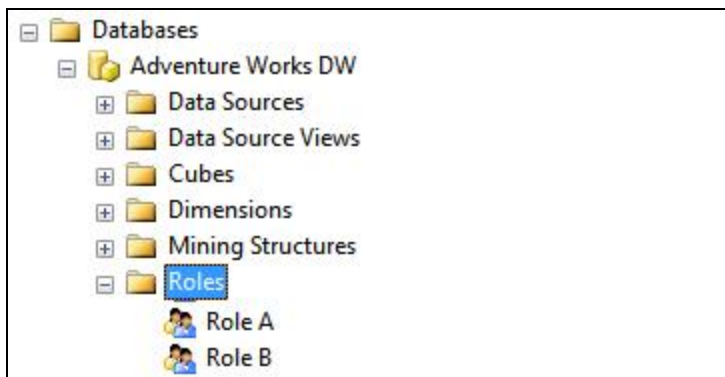
Select **OK** in the Create Role dialog to finish creating `Role A`.

Next, follow the same steps as above to create `Role B`. The only difference is in the Dimension Data page where you'll want to restrict access to different cube data for the role. For example:

- Select the `Customer` dimension.
- Select the `Country` attribute hierarchy.
- Check all members except `United States`.



Refresh the SSAS database node to see the two roles.



Set up User Groups and Accounts in Symphony

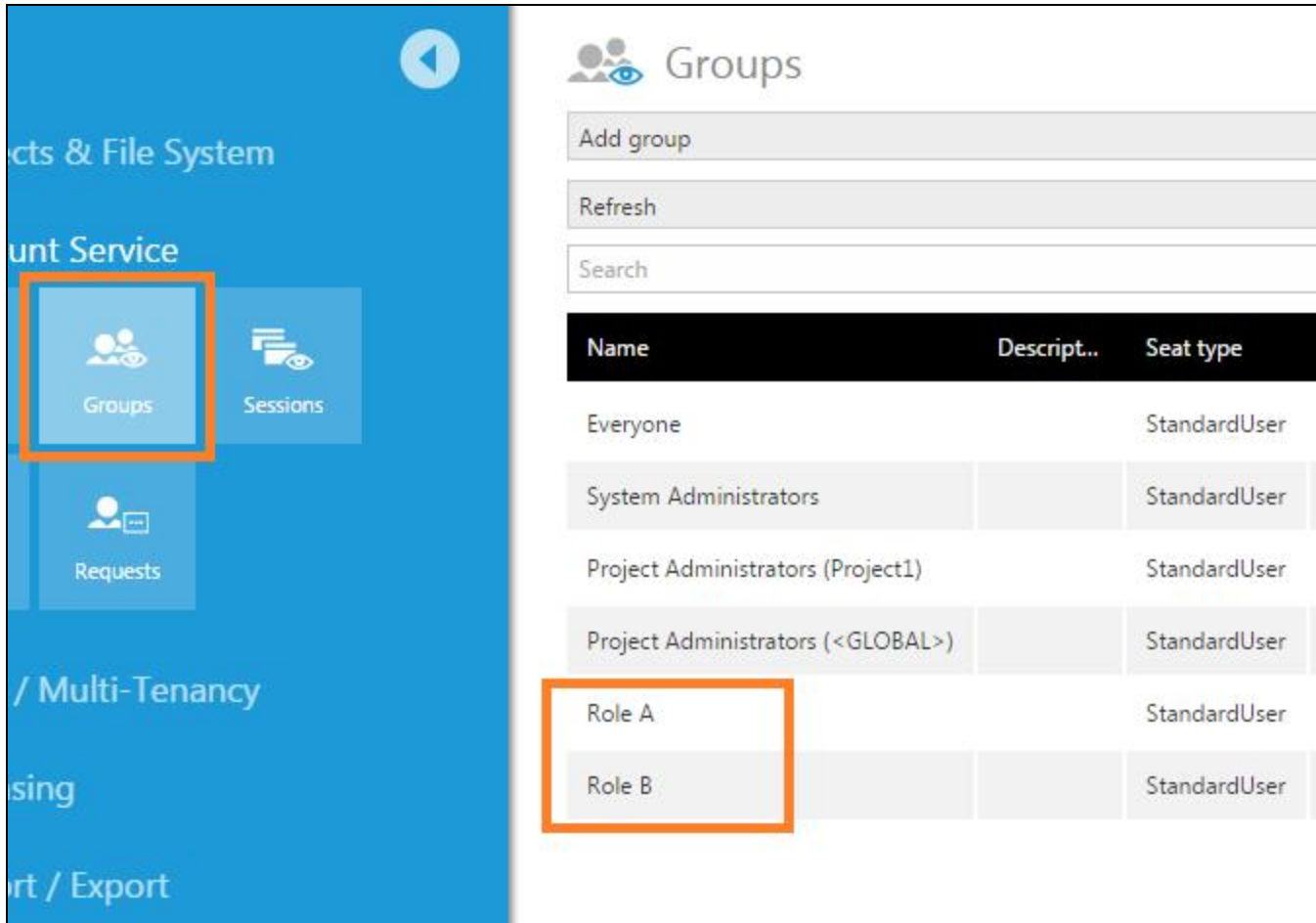
Log on to Symphony as an administrator and go to the Admin screen. Expand Account Service and select **Groups**.

For each SSAS role, create a corresponding [group](#) in Symphony with the **exact same name** as the role.

Note that role/group names cannot include any characters from this list:

. , ; ' ` : / \ * | ? " % \$! + = () [] { } < >

The underscore (`_`) character is allowed.



Groups

Add group

Refresh

Search

Name	Descript..	Seat type
Everyone		StandardUser
System Administrators		StandardUser
Project Administrators (Project1)		StandardUser
Project Administrators (<GLOBAL>)		StandardUser
Role A		StandardUser
Role B		StandardUser

Next, create a new user named `User A` and add this as a member of the group `Role A`.

Similarly, create a new user named `User B` and add this as a member of the group `Role B`.



Create a New Project and Dashboard

Log on to Symphony as an administrator or developer and create a new project (**Project1**) which will be accessible to all users. Make sure Project1 is the active project.

Create a new data connector (**DataConnector1**) using the SQL Server Analysis Services data provider:

- Set **Windows Impersonation** to `Specified` and enter the domain credentials that were added to the SSAS Membership pages.
- Set the **Database Name** to the name of the SSAS database.
- Set the **Impersonation** field to `Roles`.
- Leave the **Script** field at its default setting. This C# script [returns the names of the groups](#) the current user belongs to (excluding built-in Symphony groups such as System Administrators and Everyone).

Data Provider

Microsoft SQL Server Analysis Services

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Windows Impersonation

Specified

Domain

DUNDAS

Username

vetec

Password

Relay Credentials

☐

Server Name

VETEC

Database Name

Adventure Works DW

Impersonation

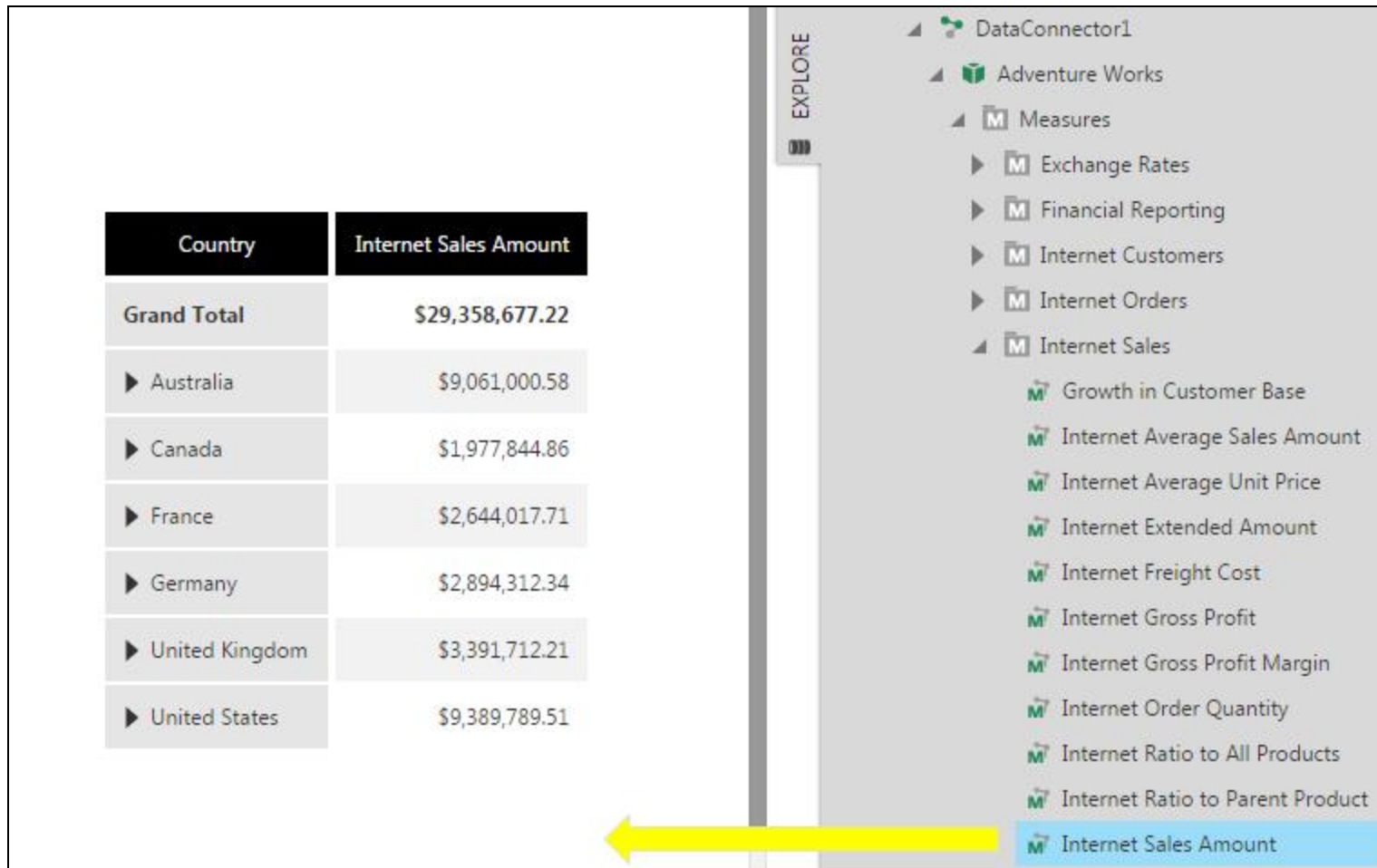
Roles

Script

```
return string.Join(", ",
currentSession.GetGroupNames(GroupKind.Standard));
```

Command Timeout

Then create a new dashboard (**Dashboard1**) by dragging the `Internet Sales Amount` measure and the `[Customer].[Customer Geography]` hierarchy from `DataConnector1` to the dashboard canvas.



The screenshot shows the Logi Symphony interface. On the left, a dashboard titled 'Dashboard1' displays a table with 'Country' and 'Internet Sales Amount'. On the right, the 'EXPLORE' window shows a tree view of data sources and measures. A yellow arrow points from the 'Internet Sales Amount' measure in the Explore window to the dashboard table.

Country	Internet Sales Amount
Grand Total	\$29,358,677.22
▶ Australia	\$9,061,000.58
▶ Canada	\$1,977,844.86
▶ France	\$2,644,017.71
▶ Germany	\$2,894,312.34
▶ United Kingdom	\$3,391,712.21
▶ United States	\$9,389,789.51

EXPLORE

- DataConnector1
 - Adventure Works
 - Measures
 - Exchange Rates
 - Financial Reporting
 - Internet Customers
 - Internet Orders
 - Internet Sales
 - Growth in Customer Base
 - Internet Average Sales Amount
 - Internet Average Unit Price
 - Internet Extended Amount
 - Internet Freight Cost
 - Internet Gross Profit
 - Internet Gross Profit Margin
 - Internet Order Quantity
 - Internet Ratio to All Products
 - Internet Ratio to Parent Product
 - Internet Sales Amount

Right-click on `Dashboard1` in the Explore window and check it in.

View the Dashboard as Each User

Log out of Symphony and log back on as `UserA`.

View **Dashboard1** and observe that it displays restricted data corresponding to SSAS Role A.

ESSENTIAL

COMMON

ADD / EDIT

Edit Copy for Analysis

Full Screen

Share

Note

Notification

Country	Internet Sales Amount
Grand Total	\$29,358,677.22
▶ United States	\$9,389,789.51

Log out again and log back on as UserB.

View **Dashboard1** and observe that it displays restricted data corresponding to SSAS Role B.

ESSENTIAL

COMMON

ADD / EDIT

Edit Copy for Analysis

Full Screen

Share

Note

Notification

Country	Internet Sales Amount
Grand Total	\$29,358,677.22
▶ Australia	\$9,061,000.58
▶ Canada	\$1,977,844.86
▶ France	\$2,644,017.71
▶ Germany	\$2,894,312.34
▶ United Kingdom	\$3,391,712.21



Manage the Teradata Connector

This applies to: *Visual Data Discovery*

The Symphony Teradata connector lets you access the data available in Teradata databases using the Symphony client. The Symphony Teradata connector supports Teradata version 16.20.

Before you can establish a connection from Symphony to Teradata storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To Teradata In Data Discovery](#) for details specific to the Teradata connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A



Feature	Supported?
Nested Fields	N/A
Partitions	N
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y

Connect to Teradata in Data Discovery

The Teradata connector requires a JDBC driver to be configured before you can connect to your data source. You can download the driver from the vendor's site. If you are upgrading, keep in mind you need to configure the JDBC driver. For more information and steps, see [Add A JDBC Driver](#).

You can limit the list of available collections in a Teradata data store to collections from a specific schema specified in the Teradata JDBC URL. Use the Teradata JDBC URL `database` property to limit the list of available schemas as well as the list of available collections to collections from the schema. For example:

```
jdbc:teradata://<url>/dbs_port=<port>,database=<schema>
```

Be sure to work with your Teradata database administrator when you do this.

Connecting to Teradata in Managed Dashboards

This applies to: *Managed Dashboards, Managed Reports*

 **Note:** You can also use [ODBC](#) or [JDBC](#) drivers to connect to Teradata.

Main article: [Connect to Data and View it on a Dashboard](#)

Install the Driver

The **Teradata** data provider requires drivers to be installed on the server or computer where Symphony was installed.



If you are using [multiple servers](#) to run Symphony, this is needed for each server installation.

Linux

For Symphony installations on Linux, including Docker images and Kubernetes, download the [Teradata .NET Data Provider NuGet Package](#). This file has a .nupkg extension but is a ZIP file that you can extract to find `Teradata.Client.Provider.dll` in the `/lib/netstandard2.0` folder or similar.

Note: You will need the .NET Standard or .NET Core version of this file, not the .NET Framework version that may instead be located in a folder such as `net461`.

The DLL needs to be placed in this location within the Symphony instance's files:

```
/usr/share/dundas/bi/Files/{Instance Name}/www/BIWebsite/App_Data/ExtensionsLib/netcore/Teradata.Client.Provider.dll
```

For a Docker image, the instance name is `Container`. Otherwise, you can find the `App_Data` folder within your Symphony installation's folder, create two additional subdirectories `ExtensionsLib/netcore/` (if they do not exist), and place the DLL within `netcore`.

Ensure the permissions allow the `dundasbi` group to read and execute the new file (e.g., `chgrp dundasbi Teradata.Client.Provider.dll` and `chmod 751 Teradata.Client.Provider.dll`). Restart the Symphony service to ensure the DLL is loaded (e.g., for a Symphony instance, [restart the website service](#)).

Create a Data Connector

Set **Data Provider** to **Teradata** when [creating a new data connector](#).

more help

New Data Connector

A data connector lets you connect to your data through a provider. Once the data connector's provider is saved, it cannot be changed.

Name

Data Connectors Root Folder/Teradata

[Select a name...](#)

Data Provider

Teradata

Test connection

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Server Name

TeradataServer

Authentication

Use Teradata authentication

User ID

analysis

Password

.....

▸ Authentication

▸ Connection Pooling

▸ Data Dictionary

Manage the Vertica Connector

This applies to: *Visual Data Discovery*

The Symphony Vertica connector lets you access the data available in the Vertica SQL query engine using the Symphony client. The Symphony Vertica connector supports Vertica version 7.2.

Before you can establish a connection from Symphony to Vertica storage, a connector server needs to be installed and configured. See [Manage Connectors And Connector Servers](#) for general instructions and [Connect To Vertica In Data Discovery](#) for details specific to the Vertica connector.

After setting up the connector, create data sources that specify the necessary connection information and identify the data you want to use. See [Manage Visual Data Discovery Data Source Configurations](#) for more information. After you set up your data sources, create [dashboards](#), [self service reports](#), and [visuals](#) from the data in these data sources.

Feature Support

Connector support for specific [features](#) is shown in the following table.

Key: Y - Supported; N - Not Supported; N/A - not applicable

Feature	Supported?
Admin-Defined Functions	Y
Box Plots	Y
Custom SQL Queries	Y
Derived Fields (Row-Level Expressions)	Y
Distinct Counts	Y
Fast Distinct Values	N/A
Group By Multiple Fields	Y
Group By Time	Y
Group By UNIX Time	Y
Histogram Floating Point Values	Y
Histograms	Y
Kerberos Authentication	N
Last Value	Y
Live Mode and Playback	Y
Multivalued Fields	N/A

Feature	Supported?
Nested Fields	N/A
Partitions	N
Pushdown Joins for Fusion Data Sources	Y
Schemas	Y
Text Search	N/A
TLS	Y
User Delegation	N
Wildcard Filters	Y
Wildcard Filters, Case-Insensitive Mode	Y
Wildcard Filters, Case-Sensitive Mode	Y

Connect to Vertica in Data Discovery

The Vertica connector requires a JDBC driver to be configured before you can connect to your data source. You can download the driver from the vendor's site. If you are upgrading, keep in mind you need to configure the JDBC driver. For more information and steps, see [Add A JDBC Driver](#).

Symphony supports Flex tables. However, you must properly map the metadata for the Flex tables in Vertica to use these data in Symphony.

The Interval data type in Vertica will be converted to the Number type in Symphony. The values for the Interval data type will be converted as follows in Symphony:

- INTERVAL [DAY TO SECOND] - number of seconds
- INTERVAL [YEAR TO MONTH] - number of months

The fields containing these converted data will be marked as Raw Data Only. You can view these data in the [Details window](#) on a visual or export as raw data.

Connecting to Vertica in Managed Dashboards

This applies to: *Managed Dashboards, Managed Reports*

Main article: [Connect to Data and View it on a Dashboard](#)



- Archive of documentation for Logi Symphony v24

Install the Driver

To connect to the Vertica database when Symphony is installed on Linux or if you have an older version of Symphony, you may need to download and install the drivers first.

For details on installing the ODBC or JDBC drivers on Linux, see [Vertica's documentation](#).

Create the Data Connector

Set **Data Provider** to **Vertica Database** when creating a [new data connector](#).

Select the **Authentication** method and, if required, provide credentials. Enter the **Host** server and the **Database** name.

more help



New Data Connector

A data connector lets you connect to your data through a provider. Once the data connector's provider is set, it cannot be changed.

Name

[Select a name...](#)

Data Provider

Vertica Database

Test connection  

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Use Vertica Server authentication

User

Password

Host

Database

▸ Connection Pooling

▸ Connection Settings

▸ Session Settings

Connecting to XML Files

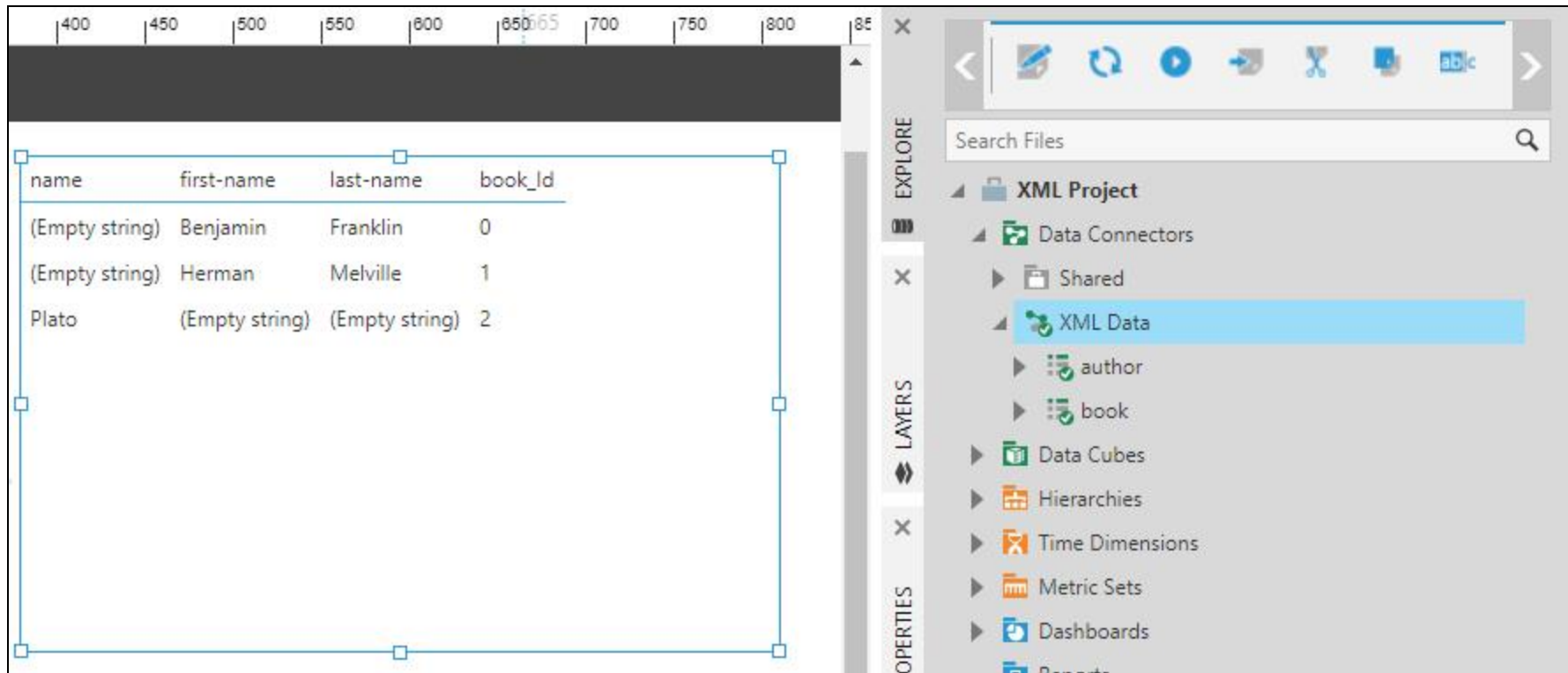
This applies to: *Managed Dashboards, Managed Reports*

Create a data connector to connect to an XML file, using one or more optional features.

Drag an XML File

To upload an XML file to Symphony and connect to it automatically with default options, you can simply drag the file onto a new metric set, or onto a view such as a dashboard when editing.

The file's data will be visualized automatically. A new data connector will also be added automatically that you can use.



The screenshot displays the Logi Symphony interface. On the left, a data table is visible with the following columns: name, first-name, last-name, and book_Id. The table contains three rows of data:

name	first-name	last-name	book_Id
(Empty string)	Benjamin	Franklin	0
(Empty string)	Herman	Melville	1
Plato	(Empty string)	(Empty string)	2

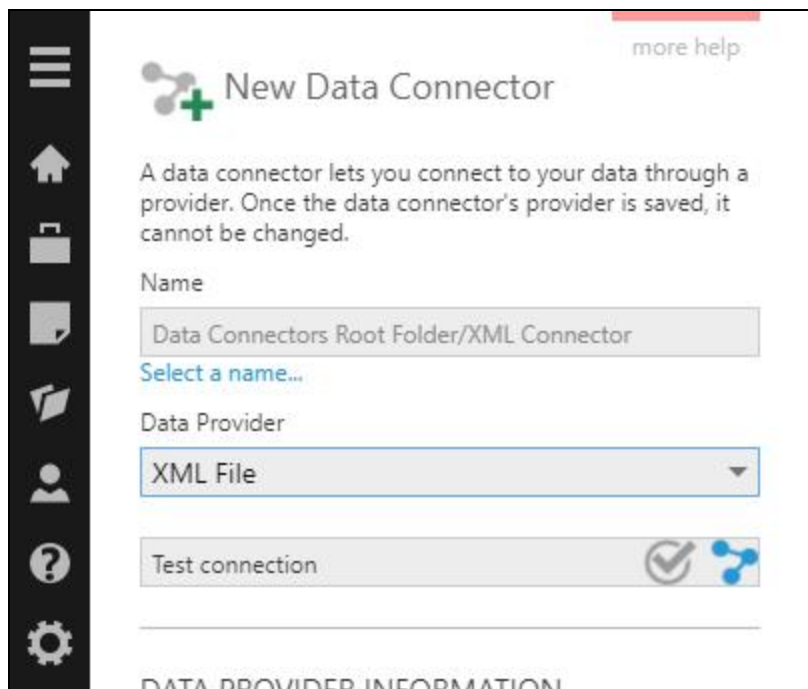
On the right, the 'EXPLORE' sidebar is open, showing a search bar and a list of files. The 'XML Project' is selected, and the 'XML Data' connector is highlighted. Other connectors listed include 'author' and 'book'. The 'LAYERS' and 'PROPERTIES' panels are also visible on the right side of the interface.

This is similar to [dragging and dropping an Excel file](#).

Create a Data Connector

You can create a data connector for an XML file yourself or edit one to access more options.

To create one, select **New** in the main menu on the left, and select **Data Connector**.



In the *New Data Connector* dialog, set a **Name** for your connector, and set the **Data Provider** drop-down to *XML File*.

There are two options for connecting to an XML file:

- **Upload a file** - Select **Choose File** and browse to find the XML file to upload.
- **Define the XML file path** - Alternatively, set **XML File** to either a URL (e.g., `https://www.w3schools.com/xml/books.xml`) or a UNC path (e.g., `\\FileServer\Xml\books.xml`) pointing to the file.

DATA PROVIDER INFORMATION

Enter the information for the selected data provider. This will help us connect to your data properly.

Authentication

Server Windows credentials

Upload New File

Choose File No file chosen

XML File

XML Namespace

Schema Location

Inline Schema

Define structure

If you enter an XML File path, you can use wildcard characters * or ? to refer to multiple files with the same structure, similar to the example shown for [Excel files](#).

When connecting directly to an XML File path (not when uploading a file), you can set the **Authentication** method Symphony will use to access the file. See [Authentication Methods](#).

Settings

XML Namespace

If the XML document you are using has an XML namespace defined, you should enter that value in the **XML Namespace** field.

XML Namespace

http://www.w3.org/TR/html4/

Schema Location

Set **Schema Location** to `Inline Schema` when the XML schema is stored in the XML file.

If there is no schema, set it to `No Schema` and the data will be automatically discovered. Optionally, select **Infer Schema** to generate a schema automatically from the content first and load the data according to that schema.

Schema Location

No Schema

Infer Schema

☒



If you have the schema in a separate file, set Schema Location to `External Schema` and either upload it or set the **XSD File** field to the path like when setting the XML File field.

XML File

\\FileServer\Book.xml

XML Namespace

Schema Location

External Schema

Upload New File

Choose File

No file chosen

XSD File

\\FileServer\Book.xsd

Define Tenant Access to the <GLOBAL> Project

This applies to: *Managed Dashboards, Managed Reports*

All users in Symphony have access to the <GLOBAL> project by default. The <GLOBAL> project and shared files are created as a part of the installation process and available to all global users. As needed, you can make <GLOBAL> content available to [tenant users](#).

When a project is associated with a tenant, it cannot be accessed by members of any other tenant unless you explicitly change the [security settings](#) for the project. Tenant users can also create their own content in these projects if they have sufficient privileges. Tenant administrators can create projects within their own tenant.



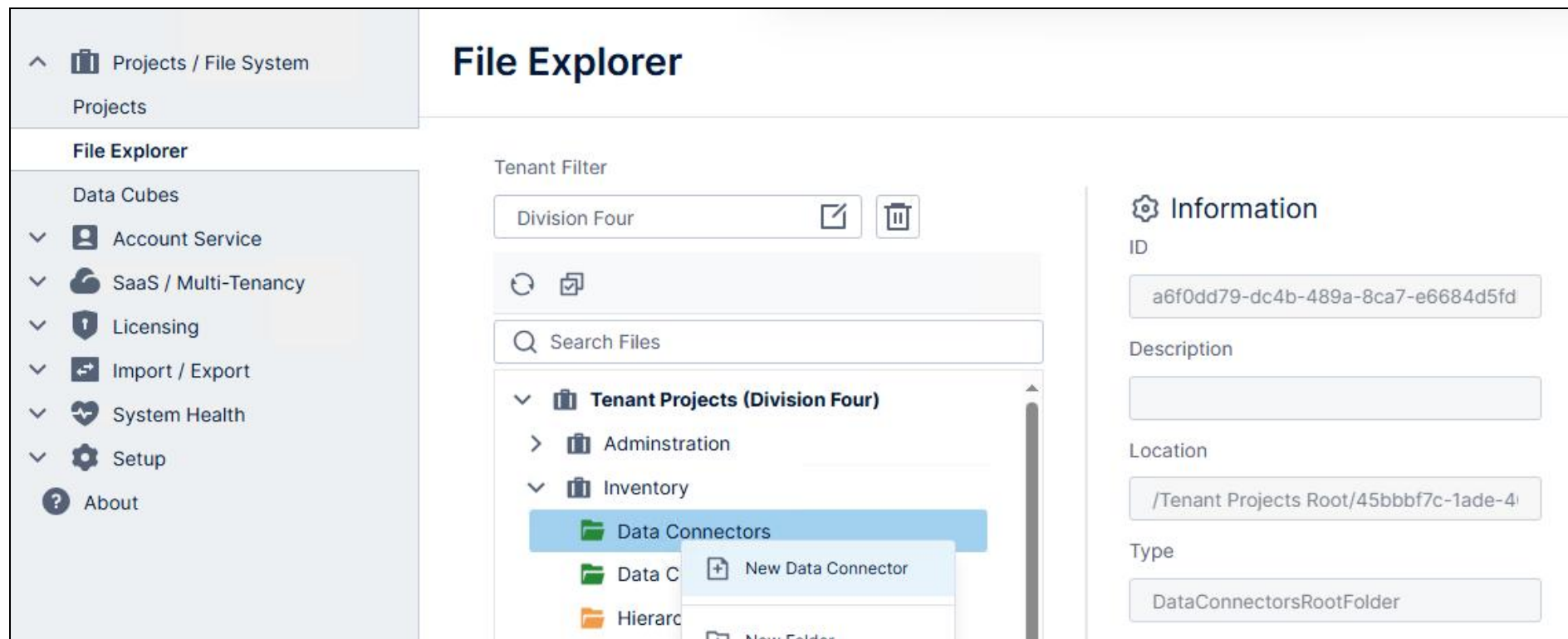
Note: System administrators can manage all content from Administration and share links with other global users not associated with any tenant as required.

Remove Access to the <GLOBAL> Project for all Tenants

If you'd like to prevent your tenant users from accessing resources in the <GLOBAL> project, remove their access to <GLOBAL>, then add appropriate connectors and projects to their tenant.

1. Log in to Symphony as a system Admin user and open the Managed Dashboards work area. Your main dashboards work area opens.
2. Select **Profile > Administration** from the main menu. The Symphony Overview work area opens, including an expanded main menu with administration options.
3. Select **Projects / File System > Projects**. The Projects work area opens.
4. Select the <GLOBAL> project, then **Edit**. The Properties window for this project opens.
5. Select **Security** to open the Security work area.
6. Select **Add...** in the Groups and Accounts area. Select Global Users, [assign appropriate security privileges](#), then select **Save** to save your changes. This gives access to the <GLOBAL> project for all global users not associated with one or more tenants.
7. Next, find the group **Everyone** in the Groups and Accounts area, then select the trash can icon to remove access.
8. Select **Save** to save your changes. The Security work area closes, returning you to the Properties work area.
9. Select **Save** to save your changes. The Properties work area for this project closes. Current and future users can no longer access the shared <GLOBAL> project by default.

Next, create and give your tenant users access to a [connector](#). Create or access data connectors by navigating to the [Administration work area](#), then select a project file by selecting **Projects/File System**, then **File Explorer** to add the connector to a project. Connect directly to a data source, or connect to Visual Data Discovery data source for their projects.



File Explorer

Tenant Filter

Division Four

Search Files

Tenant Projects (Division Four)

- Administration
- Inventory
- Data Connectors**
 - New Data Connector
 - New Folder
- Data C
- Hierarc

Information

ID: a6f0dd79-dc4b-489a-8ca7-e6684d5fd

Description:

Location: /Tenant Projects Root/45bbbf7c-1ade-4

Type: DataConnectorsRootFolder

For more information, see:

- [Add And Edit Tenant Users](#)
- [Multi-Tenancy In Symphony](#)

Other Database Connection Issues

This applies to: *Managed Dashboards, Managed Reports*

Issue: Data cube job or database query never ends or ends in error

Symptom:

- A [job](#) that builds or updates your data cube [warehouse or in-memory storage](#) 'hangs' or does not complete. An error message may be reported in the job run details or [logs](#) when the job completes or is canceled.
- For certain queries or for affected jobs, an error message containing text such as the following (possibly contained within other messages): *A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond*

Resolution:

Some connections to your database may have been terminated by network infrastructure such as a firewall after a certain period of time or due to other reasons. Some data providers have a *keep alive* option that offers a potential solution to this problem:

- For example when editing a data connector using the *Oracle Database* data provider, expand the **Advanced** section and enable the **Keep Alive** option. You can read more about the [Keep Alive](#) and related [Keep Alive Interval](#) and [Keep Alive Time](#) settings on Oracle's website.
- Similarly, you can edit a data connector using the *PostgreSQL* data provider, and expand the **Performance** section to find the **Keepalive** and **TCP Keepalive** options. Each of these options is used in different scenarios. For details, see the [Npgsql page on the Keepalive options](#).

For data cube storage jobs, there is a [configuration setting](#) named *Database Bulk Copy Timeout*, found in the *General* category with advanced settings shown. You may prefer to set this to a shorter amount of time when a job takes unnecessarily long to prevent it from running continuously in case one of its copy operations is stalled.

For more information, see:

- [Connect to Data and View it on a Dashboard](#)
- [Monitoring System Health](#)
- [Data Cube Data Storage Options](#)