FUSION REGISTRY
VERSION 9

Tutorial
This guide describes how to connect Tableau to the Fusion Registry Virtual Data Repository

Tableau Connectivity via Web Data Connector
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1 Overview

This document discusses how to connect Tableau to the Fusion Registry Virtual Data Repository in order to explore, retrieve, and analyse data. The term Virtual Data Repository is used in the context of the Fusion Registry as it provides access to multiple data sources from a single API. Tableau is able to connect to the Fusion Registry API to retrieve data for any of the data stores the Fusion Registry is connected with.

The following image shows the high level architecture, where Tableau is acting as the presentation tier, enabling users to view, tabulate, graph and analyse data. The Fusion Registry provides Tableau an API for data retrieval, where ultimately the data will live in one or more data stores, which may have varying types.

![High level architecture of Tableau connectivity to the Fusion Registry](image)

Tableau provides a number of mechanisms for connectivity. The Fusion Registry supports Tableau’s Web Data Connector. A Web Data Connector is launched in Tableau and opens an embedded web browser window. The URL of a web page hosted by Fusion Registry is then entered into the Web Data Connector URL bar; this web page provides Tableau with the User Interface (UI) for data discovery and retrieval. In the above image, the Fusion Registry generated UI is shown as the Tableau API. The UI dynamically obtains information from the Fusion Registry about which datasets are available and builds a data discovery interface for the user to browse datasets and make data selections, this is achieved by using the SDMX API. On data selection Tableau then asks the Fusion Registry to obtain the selected data, again via the SDMX API. The Fusion Registry Tableau connector is then able to reformat the SDMX data into a Tableau dataset in the way that Tableau prescribes.

Any new data loaded into, or registered with the Fusion Registry will be immediately accessible in Tableau, and the Web Data Connector UI will update accordingly to reflect the presence of the new data, making it available for query.
2 Connecting Tableau to the Fusion Registry

These steps work for both the commercial version of Tableau, as well as the free to use public version, both available from the Tableau website.

After opening Tableau connect to a Server, choosing the Web Data Connector. If this option is not shown in the left hand navigation bar, click ‘More…’ to show the option in the right hand window, as shown below.

![Open Web Data Connector](Figure 2 Tableau's launch page, showing the option to connect using a Web Data Connector)

After clicking the Web Data Connector option, a pop up window will appear, this is the embedded web browser in Tableau. This invites the user to enter the URL to connect to. The URL for the Fusion Registry is:

http(s)://[registry url]/tableau/explorer.html

For example:

https://demo.metadatatechnology.com/FusionRegistry/tableau/explorer.html
Figure 3 showing the Web Data Connector with the Fusion Registry demo server URL entered into the URL bar

On entering this URL, and pressing [enter] Tableau will retrieve the User Interface from the Fusion Registry and present it in the embedded browser, as shown below.
Figure 4 showing available datasets in the Fusion Registry demo server, presented in Tableau’s Web Data Connector

The available Datasets from the Fusion Registry are displayed in Tableau’s embedded web browser, the user is able to choose one or more Datasets to query. After selecting one or more datasets, click Next.
The next step shows all the available dimensions, and filters for each dimension, for the chosen datasets. If multiple datasets were selected in step 2, then the list of dimensions is the combination of dimensions from all datasets, with the values for each dimension being the combination of common dimensions. It should be noted that with multiple dataset selection it possible to construct a query which only retrieves data from a subset of selected datasets.
On clicking ‘Get Data’ in the Web Data Connector, the embedded browser window will close, and the dataset tables resulting from the data query will be displayed in the left hand pane. Drag and drop the table into the drop zone shown in the above image, and then click the Update Now button to retrieve the data. If multiple tables are put into the drop zone, Tableau will provide mechanisms for performing table joins.
Once Tableau gets the data, it will be displayed in the table, as shown in the image above. Each coded SDMX Dimension and Attribute will show both the code id and code name, code names will be displayed according to the user’s locale settings if multilingual names were defined in the SDMX metadata. It is possible at this point to hide/show columns, or click on ‘Sheet 1’ to construct a data visualisation of the data. The visualisations can be saved, and the data in the visualisations can be updated directly from the Fusion Registry using the data refresh mechanisms provided by Tableau.