

FUSION REGISTRY

Tableau Connectivity via Web Data Connector

FUSION REGISTRY VERSION 9

Tutorial

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

Contents

1	Overview	2
2	Connecting Tableau to the Fusion Registry	3

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.

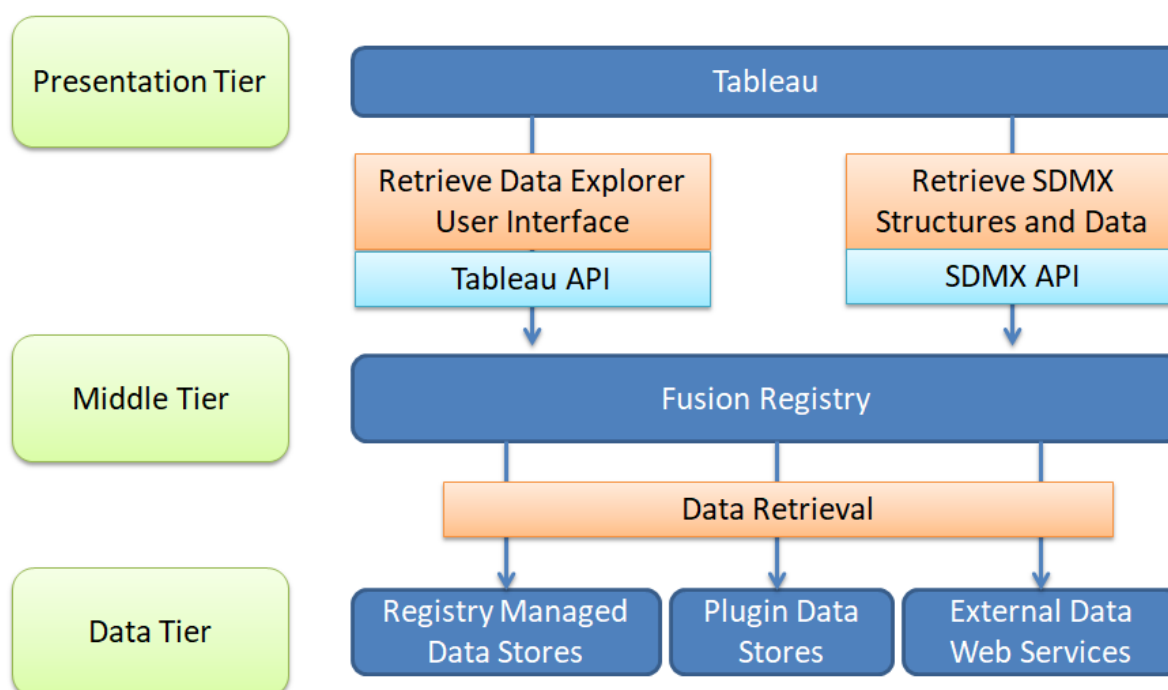


Figure 1 showing a high level architecture of Tableau connectivity to the Fusion Registry

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.

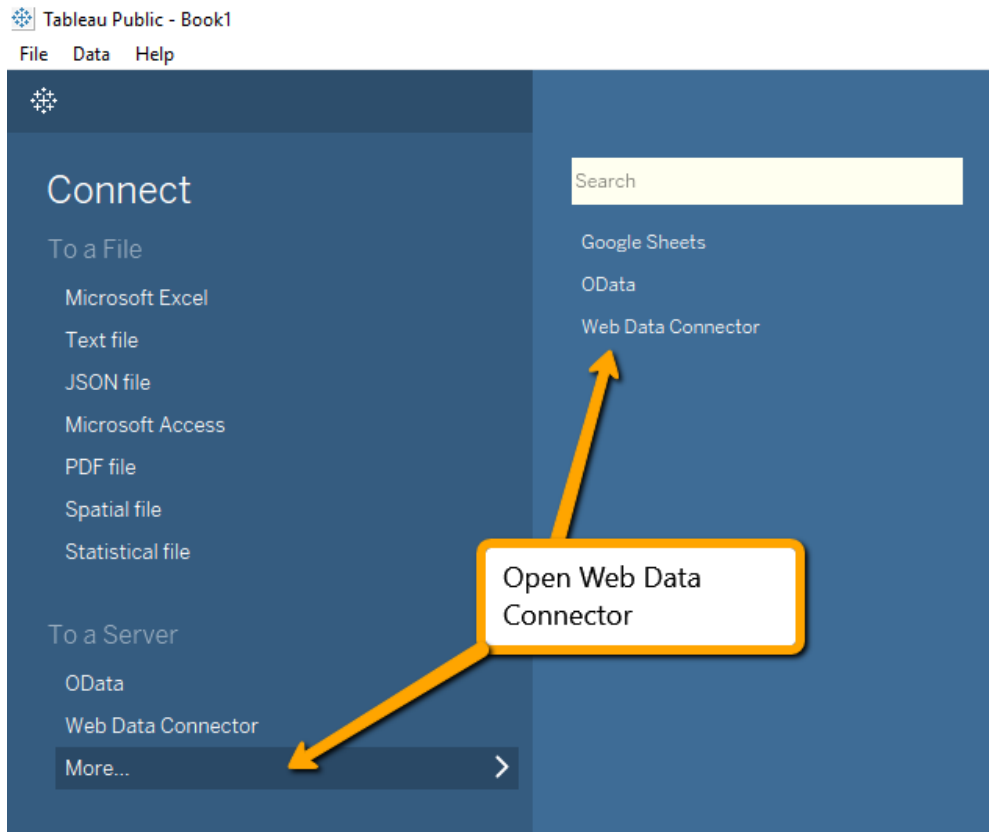


Figure 2 Tableau's launch page, showing the option to connect using a Web Data Connector

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`

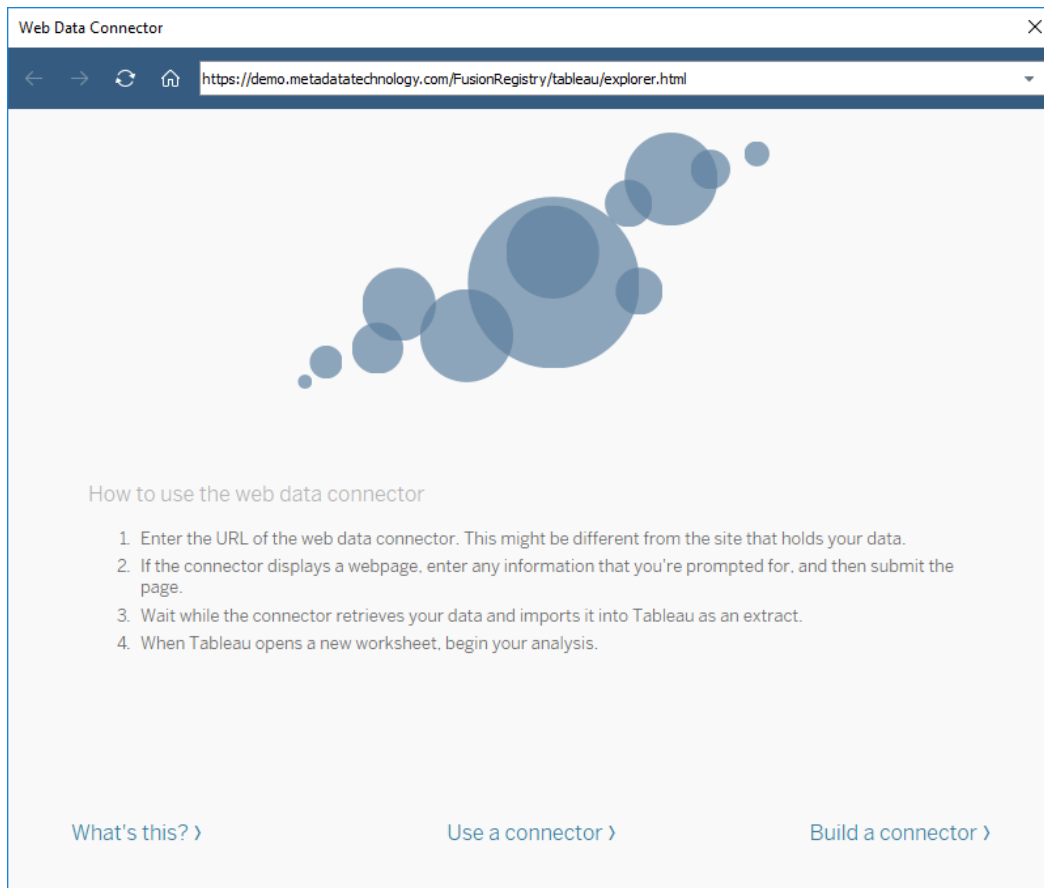


Figure 3 showing the Web Data Connector with the Fusion Registry demo server URL entered into the URL bar

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.

Fusion Registry - Demo Server

https://demo.metadatatechnology.com/FusionRegistry/tableau/explorer.html

Fusion Registry - Demo Server : Tableau Data Explorer English

<input type="checkbox"/>	ONS	GDP	1.0	Gross Domestic Product
<input type="checkbox"/>	WB	PRIVATE_SECTOR_TRADE	1.0	Private Sector and Trade
<input type="checkbox"/>	WB	WDI_ECON_POL_DEBT	1.0	Economic Policy and Debt
<input type="checkbox"/>	WB	WDI_EDUCATION	1.0	Education
<input type="checkbox"/>	WB	WDI_FINANCIAL_SECTOR	1.0	Financial Sector
<input type="checkbox"/>	WB	WDI_HEALTH	1.0	Health
<input type="checkbox"/>	WB	WDI_INFRASTRUCTURE	1.0	Infrastructure
<input type="checkbox"/>	WB	WDI_LABOR_SOC_PROTECT	1.0	Labor and Social Protection
<input type="checkbox"/>	WB	WDI_POVERTY	1.0	Poverty
<input type="checkbox"/>	WB	WDI_PUBLIC_SECTOR	1.0	Public Sector

NEXT: Choose Filters

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.

Fusion Registry - Demo Server

https://demo.metadatatechnology.com/FusionRegistry/tableau/explorer.html

Fusion Registry - Demo Server : Tableau Data Explorer English

Dimensions

- Reference Area: IDN
- Series: All
- Time Selection:

Available Filters

- [ASM] American Samoa
- [AUS] Australia
- [BRN] Brunei Darussalam
- [CHN] China
- [FJI] Fiji
- [FSM] Micronesia, Fed_ Sts_
- [GUM] Guam
- [HKG] Hong Kong SAR, China
- [IDN] Indonesia
- [JPN] Japan
- [KHM] Cambodia
- [KIR] Kiribati
- [KOR] Korea, Rep_
- [LAO] Lao PDR
- [MAC] Macao SAR, China
- [MHL] Marshall Islands
- [MMR] Myanmar
- [MNG] Mongolia
- [MNP] Northern Mariana Islands
- [MYS] Malaysia
- [NCL] New Caledonia
- [NZL] New Zealand
- [PHL] Philippines
- [PLW] Palau
- [PNG] Papua New Guinea
- [PRK] Korea, Dem_ Rep_
- [PYF] French Polynesia
- [SGP] Singapore
- [SLB] Solomon Islands
- [THA] Thailand
- [TMP] Timor-Leste
- [TON] Tonga
- [TUV] Tuvalu
- [VNM] Vietnam
- [VUT] Vanuatu
- [WSM] Samoa

PREV: Choose Datasets 489 Matched Series from Selection Get Data

Figure 5 showing the available filters for the selected dataset

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.

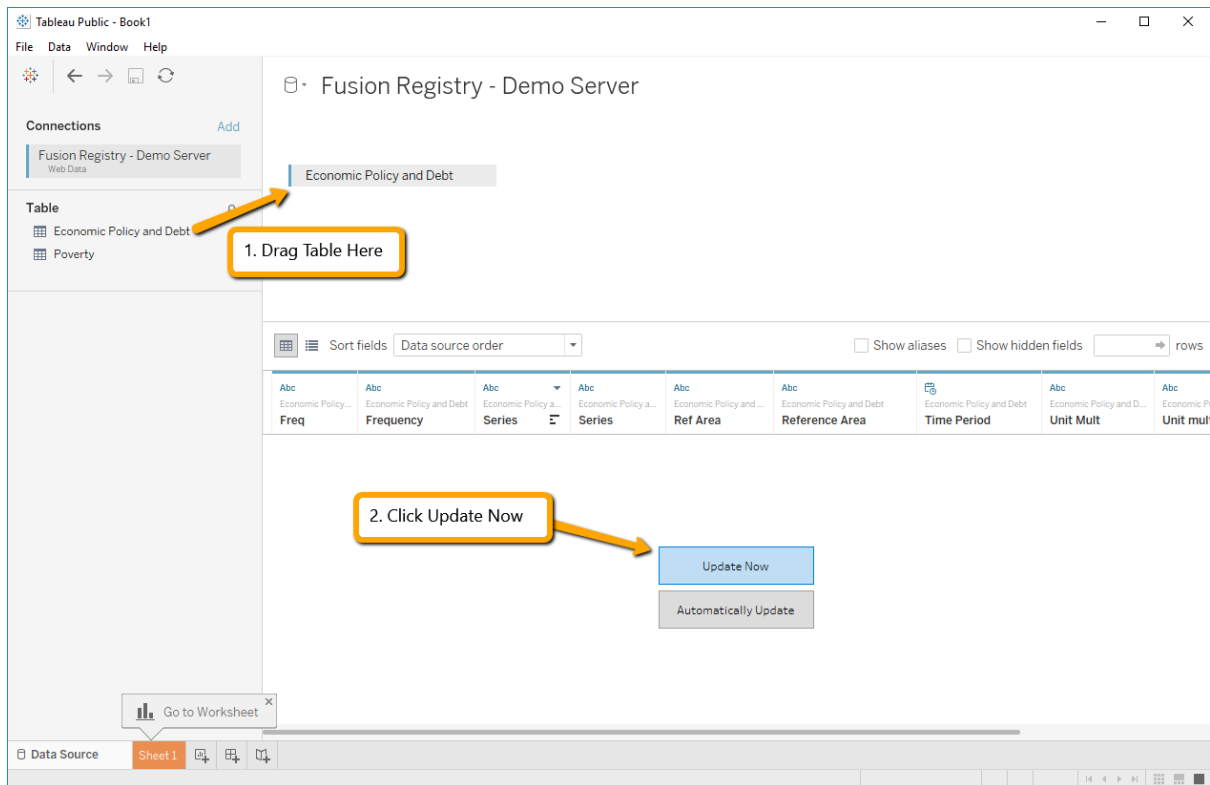


Figure 6 showing the result in Tableau

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.

The screenshot shows the Tableau Public interface with a dataset loaded from 'Fusion Registry - Demo Server'. The dataset is displayed in a table with the following columns and data:

Series	Series	Ref Area	Reference Area	Time Period	Obs
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2003 00:00:00	3.10000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2004 00:00:00	3.00000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2005 00:00:00	2.90000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2006 00:00:00	3.70000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2007 00:00:00	5.10000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2008 00:00:00	2.80000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2009 00:00:00	2.50000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2010 00:00:00	2.20000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2011 00:00:00	2.10000
SI_POV_NAGP	Poverty gap at national poverty lin...	IDN	Indonesia	01/01/2012 00:00:00	1.90000
SI_POV_GAPS	Poverty gap at \$1_25 a day (PPP) (...)	IDN	Indonesia	01/01/1984 00:00:00	21.36000

Figure 7 showing a dataset in Tableau

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.