



On-Demand Training: Data Server Transcript

Welcome to this Tableau Data Server video. The data server is a component of both Tableau Server and Tableau Online and provides centralized management of Tableau data extracts and database connections.

Data Server

The data server enables IT and other database professionals to define and govern data source connections. These are created in Tableau Desktop then published to Tableau Server or Online. Once published, the data connection can be easily accessed by business users in Tableau Desktop who may not be familiar with the data structure and joins needed to perform their analysis.

- Tableau Desktop users authenticate into Tableau Server or Tableau Online and have access to the published data connections that they have permission to leverage.
- When the user is connected to a published data source, the queries will be executed on the Server, rather than the Desktop, so there is no need to manage the database drivers on the client machine.
- All workbooks connected to the shared data connection will be automatically updated when changes are made to the master data model, acting as a single source of truth.

Creating a Data Connection in Tableau Desktop

Let's get started in the role of a data steward. For this training, I am going to connect into a Microsoft SQL Server database

- Feel free to use whichever on-premises data connection you need for your analysis.
 - One important note is multidimensional or cube data sources do not support pass through connections through data server. These sources would need to be used locally in Tableau Desktop.
- My data connection uses the Superstore database. To connect, drag a table into the visual data connection window.
- Let's add the returns table and create a left join.
- If the data connection is going to be published to Tableau Server, we can maintain a live connection or choose to extract the data.
- If the on premise database connection is going to be published to Tableau Online, select extract.
 - It is important to understand that data server sources published to Tableau Online do not have the same extract refresh capabilities as Tableau Server.
 - To update these sources, you can refresh the data locally in Tableau Desktop and republish the refreshed data or automate the process using the Tableau Data Extract Command line utility. For more information, refer to the videos on the Data Connections with Tableau Online.
- Go to worksheet

Managing Metadata in Tableau Desktop

Tableau has connected and read the field names and data types from our data connection. Depending on the data type, fields will be classified as measure and dimensions. We can now manipulate the master metadata model the

business users will connect to.

- Let's rename customer segment to product segment. Simply right click and choose Rename. This could be useful if you have unfamiliar naming conventions and you want to make it easier for a business user to understand the fields available. Let's click OK
- We also have a field in our data connection called Status. The Status field returns "returned" for fields from the Returns table. But because of that left join to the orders table, if an order was not returned it will be displayed as null. So we can right click and choose to edit aliases. We can see that null field we want to change to "Not Returned". And we'll click OK
- We might also want to create business metrics that other users can leverage. Right click and choose create calculated field. Let's create a quick profit ratio – we want to look at the $\text{Sum(Profit)/Sum(Sales)}$, and click OK
- Since we're setting up this model for business users and we're using a live connection it might be a good idea to test query performance by simply dragging out a few fields, we'll look at Sales by Product Category and product sub category.
- We can easily sort this by clicking the one click sort button and we see we have some smaller items that we might want to group up to a higher level.
- We can multi-select by holding down the shift key and grouping these small items together. We can right click and choose to edit the alias.
- Once again, changing aliases changes the way Tableau is going to represent this data to the business user, so we'll call this desk supplies.
- Now our grouped field is available in our data model and we can easily drag and drop and place that on top of Product Category to create a quick hierarchy. This would allow business users to drill down into information very quickly and easily.

We can even implement row-level security in the data source with the use of user filters. Please see the "Data Security" video for more information on this topic

Publishing a Data Source to Tableau Server or Online

But now that we've created this data model, we want to publish it to Tableau Server or Tableau Online.

- Right click the data source, choose publish to server
- I'm going to publish to my local tableau server, if you're using Tableau Online your server will be online. tableau.com.
 - And your username would be your email address and the password you use for your Tableau Online account.
- We'll go ahead and click sign in, and now you can see we're going to publish this data connection into the default project folder.

- We can also set permissions on who has the ability to connect to that data as well as edit it by setting permissions
- Click publish to publish the data connection. The data connection is now successfully published to Tableau Server.

Using a Published Data Source

Now we are going to create a new workbook as a business user and connect to the shared data model. Let's open up a new workbook and when they connect to data they're going to be using the Tableau Server data connection.

- They're going to authenticate into Tableau Server or Tableau Online using their credentials, and they're going to see a list of shared data connections that are available to them.
- A published Data Source could also be used with Web Authoring – for more information, please refer to that video.
- Let's go ahead and connect into our Orders Superstore.
- And notice that the connection icon has changed with the indicator to show it is a data server data source.
- A user is not going to be able to edit the centralized data model, I can't remove levels of the hierarchy or delete calculations. But I can extend the metadata as needed to accomplish my analysis in the workbook.
- Let's look at Sales by our Product Category and drill down into our Product Sub-Category.
- And this is the view I want to publish to the Tableau Server. So we'll go to publish the workbook, I'm just simply going to publish. Now you'll notice I have that workbook published to the Tableau Server that leverages that shared data source.

Editing a Published Connection

Now let's see what happens when the master data model gets updated.

- I'm going to go back into the original workbook and edit that model.
- Maybe we want to group Papers and Envelopes, we'll edit that group and edit the alias and call it Paper Supplies
- Now that I've made that change I need to overwrite the existing model on Tableau Server. So we can right click and choose to publish to server.
- We have the same data connection so it will overwrite when we click publish.
- Once we overwrite that data model, that shared data source is going to be updated.

So now if we go back into Tableau Server as a user and refresh, you'll now notice that we now have our Paper Supplies and we've reflected the changes from that master metadata model.

Publishing data connections to Tableau Server or Tableau Online provides an easy access point to data from lots of different sources and presents a single version of the truth that can be leveraged by many Tableau Desktop users. Updates to the shared data model automatically populate to all of the workbooks that use that source.

Conclusion

Thank you for watching this Data Server training video. We invite you to continue with the On-Demand Training videos to learn more about using Tableau.