



Informatica® PowerExchange for Tableau V3  
10.5.6

# User Guide

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# Preface

Use the *Informatica® PowerExchange® for Tableau V3 User Guide* to learn how to read data from source, generate a Tableau `.hyper` output file, and write data to Tableau by using the Developer tool. Learn to create a Tableau V3 connection, develop, and run mappings in the native environment.

## Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

### Informatica Network

The Informatica Network is the gateway to many resources, including the Informatica Knowledge Base and Informatica Global Customer Support. To enter the Informatica Network, visit <https://network.informatica.com>.

As an Informatica Network member, you have the following options:

- Search the Knowledge Base for product resources.
- View product availability information.
- Create and review your support cases.
- Find your local Informatica User Group Network and collaborate with your peers.

### Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit <https://search.informatica.com>. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at [KB\\_Feedback@informatica.com](mailto:KB_Feedback@informatica.com).

### Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit <https://docs.informatica.com>.

Informatica maintains documentation for many products on the Informatica Knowledge Base in addition to the Documentation Portal. If you cannot find documentation for your product or product version on the Documentation Portal, search the Knowledge Base at <https://search.informatica.com>.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at [infa\\_documentation@informatica.com](mailto:infa_documentation@informatica.com).

## Informatica Product Availability Matrices

Product Availability Matrices (PAMs) indicate the versions of the operating systems, databases, and types of data sources and targets that a product release supports. You can browse the Informatica PAMs at <https://network.informatica.com/community/informatica-network/product-availability-matrices>.

## Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services and based on real-world experiences from hundreds of data management projects. Informatica Velocity represents the collective knowledge of Informatica consultants who work with organizations around the world to plan, develop, deploy, and maintain successful data management solutions.

You can find Informatica Velocity resources at <http://velocity.informatica.com>. If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at [ips@informatica.com](mailto:ips@informatica.com).

## Informatica Marketplace

The Informatica Marketplace is a forum where you can find solutions that extend and enhance your Informatica implementations. Leverage any of the hundreds of solutions from Informatica developers and partners on the Marketplace to improve your productivity and speed up time to implementation on your projects. You can find the Informatica Marketplace at <https://marketplace.informatica.com>.

## Informatica Global Customer Support

You can contact a Global Support Center by telephone or through the Informatica Network.

To find your local Informatica Global Customer Support telephone number, visit the Informatica website at the following link:

<https://www.informatica.com/services-and-training/customer-success-services/contact-us.html>.

To find online support resources on the Informatica Network, visit <https://network.informatica.com> and select the eSupport option.

# CHAPTER 1

## Introduction to PowerExchange for Tableau V3

This chapter includes the following topics:

- [PowerExchange for Tableau V3 Overview, 7](#)
- [Introduction to Tableau, 8](#)
- [Tableau Packaged Workbook File, 8](#)
- [PowerExchange for Tableau V3 Implementation, 8](#)
- [PowerExchange for Tableau V3 Example, 9](#)

## PowerExchange for Tableau V3 Overview

You can use PowerExchange for Tableau V3 to connect to Tableau from Informatica.

You can integrate and transform data from sources, such as flat files, databases, and applications to generate a Tableau `.hyper` file. You can also create a Tableau packaged workbook (TWBX) and publish the generated TWBX file to Tableau.

When you connect to sources from Tableau, you have to rely on the speed of the underlying data sources. For faster turnaround, offline access, and sharing centralized data with multiple users, you can eliminate accessing other data sources directly from Tableau and use the portable `.hyper` file instead.

A Tableau `.hyper` file contains data extracted from an external data source. The `.hyper` file is a high performance Tableau-specific file format with `.hyper` extension that is used to analyze huge amount of data sets quickly.

The `.hyper` and the TWBX files are compatible with Tableau products version 10.5 or later. Use the `.hyper` or the TWBX file in Tableau Desktop to visualize the data and identify patterns and trends. You can also use the Tableau V3 connection in a mapping to publish the `.hyper` or TWBX file directly to Tableau Server or Tableau Online.

When you use PowerExchange for Tableau V3 on Linux, ensure that the version of Red Hat Enterprise Linux is 7 or higher. If the version of Red Hat Enterprise Linux is less than 7, the Tableau V3 connections along with all the other connections might fail.

You cannot configure a PowerExchange for Tableau V3 mapping with multiple sessions in parallel, ensure that all the sessions are configured in a sequence.

**Note:** Informatica recommends that you use PowerExchange for Tableau if you want to generate a `.tde` output file. For more information about using PowerExchange for Tableau, see the PowerExchange for Tableau documentation.

## Introduction to Tableau

Tableau software delivers fast analytics, visualization, and rapid-fire business intelligence.

You can use Tableau Desktop to connect to any data, query the data, see patterns, identify trends, and discover visual insights in seconds. You can create interactive visualizations, reports, and dashboards without the need for programming.

Tableau Server is business intelligence that provides browser-based and mobile analytics. You can publish dashboards to Tableau Server, so that other users can interact with the data in a browser or tablet.

Tableau Online is a hosted version of Tableau Server. You can share dashboards with your organization and customers in minutes. The live, interactive views of data in Tableau Online helps you answer your questions in a web browser or tablet.

## Tableau Packaged Workbook File

The Tableau packaged workbook file is a data file with `.twbx` extension.

The packaged workbooks contain a Tableau workbook along with supporting local file data sources, custom shapes, `.hyper` files, text files, Microsoft Access or Excel files, or background images grouped together in one package. You can publish a packaged workbook from Data Integration to Tableau. A workbook can either contain a worksheet or a dashboard.

When you extract data from the source into a `.hyper` file, you can apply a predefined Tableau workbook (TWB) template to the extracted data to create a Tableau packaged workbook (TWBX). The TWB template file is custom made to perform specific analysis on the extracted source data and populates graphs and charts to represent the data. You can publish the TWBX file to Tableau and further modify the generated graphs according to your business needs.

## PowerExchange for Tableau V3 Implementation

To generate a `.hyper` file from the source data, create a Tableau V3 data object and include the data object as a target in a mapping. You can run the mapping or add the mapping to a workflow to process the data, generate the `.hyper` file, and publish the file to Tableau.

When you specify a Tableau workbook template (TWB) for a Tableau target, the Data Integration Service applies the TWB template to the `.hyper` file and generates a Tableau packaged workbook (TWBX) file.

The Data Integration Service integrates with the Tableau `.hyper` API to generate the `.hyper` or TWBX file.

The Data Integration Service uses the Tableau V3 connection to write the `.hyper` or TWBX file to a directory on the machine where the Data Integration Service runs. You can publish the `.hyper` or TWBX file to Tableau



Server or Tableau Online. The Tableau Rest APIs publish the `.hyper` or TWBX file to Tableau Server or Tableau Online. When you publish the `.hyper` or TWBX file, the file is available for analysis to multiple users within an organization. You can interact with the data, create reports and dashboards from the data, and visually represent the data.

If you do not want to publish the data to Tableau Server or Tableau Online, you can manually import the `.hyper` or TWBX file from the Data Integration Service machine to Tableau Desktop. You can edit the `.hyper` or TWBX file in Tableau Desktop and later publish the data to Tableau Server or Tableau Online.

## PowerExchange for Tableau V3 Example

You are a sales analyst in an enterprise who can access data warehouses or flat files from Tableau Desktop to analyze the data. You want to track the overall growth trend in sales, geographic distribution of sales, and top customers, and present a snapshot of the sales distribution to senior executives.

You can integrate data from multiple sources, filter the data, and perform data transformation. You can then use PowerExchange for Tableau V3 to make the data available as a `.hyper` file for analysis in Tableau. You can import the `.hyper` file in Tableau Desktop to create interactive, real-time dashboards. The visual representation helps you understand the profitability, with views presented by geography, product category, and customer segment. You can also publish the `.hyper` file to Tableau Server to share a live and interactive dashboard with all the executives in the organization.

## CHAPTER 2

# PowerExchange for Tableau V3 Configuration

This chapter includes the following topics:

- [PowerExchange for Tableau V3 Configuration Overview, 10](#)
- [Prerequisites, 10](#)
- [Environment Variables, 11](#)

## PowerExchange for Tableau V3 Configuration Overview

PowerExchange for Tableau V3 installs with the Informatica services and clients.

## Prerequisites

Before you use PowerExchange for Tableau V3, you must perform the following tasks:

- Install the Informatica services.
- Install the Informatica clients. When you install the Informatica clients, the Developer tool is installed.
- Create a Data Integration Service and a Model Repository Service in the Informatica domain.
- Add the `PATH` and `LD_LIBRARY_PATH` environment variables on the Data Integration Service machine.
- Add the `PATH` environment variable on the Developer client.
- Ensure that the version of Red Hat Enterprise Linux is 7 or later for the Data Integration Service that runs on the Linux operating system.

**Note:** If the version of Red Hat Enterprise Linux is less than 7, the Tableau V3 connections along with all the other connections might fail.

- The Tableau Extract API for the hyper file requires SSE 4.2 instructions in the processor. Ensure that the processor on the Data Integration Service machine contains the SSE 4.2 instructions.

For more information about product requirements and supported platforms, see the Product Availability Matrix on Informatica Network:

<https://network.informatica.com/community/informatica-network/product-availability-matrices>

## Environment Variables

Before you use PowerExchange for Tableau V3 in the native environment, you must add the environment variables on the Data Integration Service machine and on the Developer client.

### Setting Environment Variables on the Data Integration Service machine

Before you use PowerExchange for Tableau V3, add the `PATH` and `LD_LIBRARY_PATH` environment variables on the Data Integration Service machine.

1. In the Administrator Console, navigate to the Data Integration Service.  
The Data Integration Service page appears.
2. Click the **Processes** tab.  
The **Processes** page appears.
3. Click the pencil icon to edit the environment variables in the **Environment Variables** section.  
The **Edit Environment Variables** dialog box appears.
4. Click **New** to add a new environment variable.  
The **New Environment Variables** dialog box appears.
5. Enter the value of the **Name** field as `Path`.
6. Enter the following path in the **Value** field:  

```
./path/to/infa/setup/connectors/thirdparty/informatica.tableauv3/bin/bin:/path/to/infa/setup/connectors/thirdparty/informatica.tableauv3/bin/tableausdk:$PATH
```
7. Click **OK**.
8. Click **New** to add another new environment variable.
9. Enter the value of the **Name** field as `LD_LIBRARY_PATH`.
10. Enter the following path in the **Value** field:  

```
./path/to/infa/setup/connectors/thirdparty/informatica.tableauv3/bin/bin:/path/to/infa/setup/connectors/thirdparty/informatica.tableauv3/bin/tableausdk:/path/to/infa/setup/services/shared/bin
```
11. Click **OK**.
12. Click the **Properties** tab.  
The **Properties** page appears.
13. Click the pencil icon to edit the execution options in the **Execution options** section.  
The **Edit Execution options** dialog box appears.
14. Select the value of the **Launch Job Options** property as **In the service process**.
15. Click **OK**.

16. Provide the read, write and execute permissions to the below folder recursively:

`INFA_HOME/connectors/thirdparty/informatica.tableauv3`

17. Recycle the Data Integration Service.

## Setting Environment Variables on the Developer Client

Before you use PowerExchange for Tableau V3, add the `PATH` environment variable on the Developer client.

1. Open the `run.bat` file from the following location:

`<Client Installation Directory>\clients\DeveloperClient`

2. Add a path variable and enter the following value of the path:

`path\to\infa\setup\connectors\thirdparty\informatica.tableauv3\bin;path\to\infa\setup  
\connectors\thirdparty\informatica.tableauv3\bin\hyper%IFCONTENTMASTER_HOME%  
\bin;%infa.nativeDir%\bin;%PATH%`

## CHAPTER 3

# Tableau V3 Connections

This chapter includes the following topics:

- [Tableau V3 Connection Overview, 13](#)
- [Tableau V3 Connection Properties, 13](#)
- [Creating a Tableau V3 Connection, 15](#)

## Tableau V3 Connection Overview

Create a Tableau V3 connection to create a `.hyper` or TWBX file in a directory on the machine where you run the Data Integration Service. You can then use the Tableau V3 connection to publish the `.hyper` or TWBX file to Tableau Server or Tableau Online.

When you create a Tableau V3 connection, you define the connection attributes that the Tableau Rest APIs use to publish the Tableau `.hyper` files to Tableau Online or Tableau Server. Enter the connection attributes that are specific to the Tableau product that you want to connect to. You can specify Tableau Desktop, Tableau Server, or Tableau Online in the connection properties.

Specify Tableau Desktop when you want to create a `.hyper` or TWBX file on the local machine. To publish the generated `.hyper` or TWBX file to Tableau Server or Tableau Online, provide the Tableau Server or Tableau Online URL and the user credentials.

## Tableau V3 Connection Properties

When you set up a Tableau V3 connection, you must configure the connection properties.

The following table describes the Tableau V3 connection properties:

Property	Description
Name	Name of the Tableau V3 connection.
ID	String that the Data Integration Service uses to identify the connection. The ID is not case sensitive. It must be 255 characters or less and must be unique in the domain. You cannot change this property after you create the connection. Default value is the connection name.

Property	Description
Description	Description of the connection. The description cannot exceed 765 characters.
Location	The Informatica domain where you want to create the connection.
Type	Type of connection. Select Tableau V3.

The following table describes the properties to connect to Tableau:

Connection Property	Description
Tableau Product	<p>The name of the Tableau product to which you want to connect.</p> <p>You can choose one of the following Tableau products to publish the .hyper or TWBX file:</p> <p><b>Tableau Desktop</b></p> <p>Creates a .hyper file in the Data Integration Service machine. You can then manually import the .hyper file to Tableau Desktop.</p> <p><b>Tableau Server</b></p> <p>Publishes the generated .hyper or TWBX file to Tableau Server.</p> <p><b>Tableau Online</b></p> <p>Publishes the generated .hyper or TWBX file to Tableau Online.</p>
Connection URL	<p>The URL of Tableau Server or Tableau Online to which you want to publish the .hyper or TWBX file.</p> <p>Enter the URL in the following format: <code>http://&lt;Host name of Tableau Server or Tableau Online&gt;:&lt;port&gt;</code></p>
User Name	The user name of the Tableau Server or Tableau Online account.
Password	The password for the Tableau Server or Tableau Online account.
Site ID	<p>The ID of the site on Tableau Server or Tableau Online where you want to publish the or TWBX file.</p> <p><b>Note:</b> Contact the Tableau administrator to provide the site ID.</p>
Schema File Path	<p>The path to a sample .hyper file from where the Data Integration Service imports the Tableau metadata.</p> <p>Enter one of the following options for the schema file path:</p> <ul style="list-style-type: none"> <li>- Absolute path to the .hyper file.</li> <li>- Directory path for the .hyper files.</li> <li>- Empty directory path.</li> </ul> <p>The path you specify for the schema file becomes the default path for the target .hyper file. If you do not specify a file path, the Data Integration Service uses the following default file path for the target .hyper file:</p> <pre>&lt;Data Integration Service installation directory&gt;/apps/ Data_Integration_Server/&lt;latest version&gt;/bin/rtdm</pre>

## Site ID

You can specify the name of the site ID to point to a specific site on Tableau Server or Tableau Online where you want to publish the `.hyper` file. Specify the site name in the Tableau V3 connection properties.

Enter the site ID in the following format:

```
http://<Host name of Tableau Server or Tableau Online>:<port> /#/site/<Name of the site ID>/
View in Tableau Server or Tableau Online>
```

For example, if you create a site called *infa* on Tableau Server, the site ID for the site on Tableau Server is:

```
https://10.50.100.100:6000/#/site/infa/workbooks
```

The value you specify for the site ID in the Tableau V3 connection properties is *Infa*.

To specify an existing site ID on Tableau Server or Tableau Online where you want to publish the Tableau `.hyper` file, contact the Tableau Server or Tableau Online administrator.

## Creating a Tableau V3 Connection

Before you create a Tableau V3 data object, create a Tableau V3 connection in the Developer tool.

1. Click **Window > Preferences**.
2. Select **Informatica > Connections**.
3. Expand the domain in the **Available Connections**.
4. Select **Enterprise Applications > Tableau** and click **Add**.
5. Enter a connection name.
6. Enter an ID for the connection.
7. Optionally, enter a connection description.
8. Select the domain on which you want to create the connection.
9. Select a **Tableau V3** connection type.
10. Click **Next**.
11. Configure the Tableau V3 connection properties.
12. Click **Test Connection** to verify the connection to Tableau.
13. Click **Finish**.

## CHAPTER 4

# Tableau V3 Data Objects

This chapter includes the following topics:

- [Tableau V3 Data Objects Overview, 16](#)
- [Tableau V3 Data Object Properties, 17](#)
- [Creating a Tableau V3 Data Object, 17](#)
- [Tableau V3 Data Object Write Operation Properties, 18](#)
- [Creating a Tableau V3 Data Object Write Operation, 19](#)

## Tableau V3 Data Objects Overview

A Tableau V3 data object is a physical data object that represents data based on a Tableau resource. The Data Integration Service generates the Tableau `.hyper` file based on the data representation in the Tableau V3 data object.

You can choose to create a Tableau V3 data object or fetch metadata from an existing Tableau `.hyper` file.

The Developer tool adds a default column named `tableau_sample` when you create the Tableau V3 data object. Based on the columns in the source data, you can open the data object to add the required columns.

When you update a Tableau `.hyper` file, you can either overwrite the file or append data to the existing file. When you append data to an extract file, ensure that the column metadata in the extract file and the Tableau V3 data object are the same.

After you create the Tableau V3 data object, create a Tableau V3 data object write operation and specify the properties for the write operation. You can choose to generate the Tableau `.hyper` file and publish to Tableau Server or Tableau Online. You can also apply a Tableau workbook template to the Tableau `.hyper` file to create a Tableau packaged workbook file. You can create or overwrite data when you publish the Tableau `.hyper` file or Tableau packaged workbook file to Tableau.



# Tableau V3 Data Object Properties

Specify the data object properties when you create a Tableau V3 data object.

The following table describes the properties that you configure for a Tableau V3 data object:

Property	Description
Name	Name of the Tableau V3 data object.
Location	The project or folder in the Model Repository Service where you want to store the Tableau V3 data object.
Access Type	<p>The type of access for the Tableau V3 data object.</p> <p>You can choose one of the following options:</p> <p><b>Create an empty metadata object</b></p> <p>Creates a Tableau V3 data object with a sample port.</p> <p><b>Fetch metadata from file</b></p> <p>Imports metadata from the specified Tableau <code>.hyper</code> file.</p> <p><b>Fetch metadata from connection</b></p> <p>Imports metadata from the Tableau <code>.hyper</code> file path that you specify in the <b>Schema File Path</b> connection property.</p>
Resource Location	<p>Location of the Tableau <code>.hyper</code> file.</p> <p>The location is required when you specify the access method as File.</p>

## Creating a Tableau V3 Data Object

Create a Tableau V3 data object to specify a Tableau resource.

**Note:** If you open the Developer Tool by running the `run.bat` file as Administrator and import a Tableau object, the import fails. Instead, double-click the `run.bat` file to open the Developer Tool and import the Tableau object.

1. Select a project or folder in the **Object Explorer** view.
2. Click **File > New > Data Object**.
3. Select **Tableau V3 Data Object** and click **Next**.  
The **New Tableau V3 Data Object** dialog box appears.
4. Enter a name for the data object.
5. Click **Browse** next to the **Location** option and select the target project or folder.
6. Specify the access method. Choose to create a Tableau V3 data object or fetch data from an existing Tableau `.hyper` file.
  - To create a Tableau V3 data object, select **Create an Empty Metadata Object** as the access method.

- To fetch data from an existing Tableau `.hyper` file, select **Fetch Metadata from File** as the access method.
  - To fetch data from a Tableau `.hyper` file path that you specify in the **Schema File Path** connection property, select **Fetch Metadata from Connection** as the access method.
7. To fetch data from an existing Tableau `.hyper` file, perform the following tasks:
    - a. Click **Browse** next to the **Resource Location** option.  
The Windows **Open** dialog box appears.
    - b. Navigate to the location of the Tableau `.hyper` file and click **Open**.  
Ensure that the Tableau `.hyper` file was generated by using the Tableau V3 `.hyper` API and contains the extract object.
    - c. Optionally, select the table in the extract file and click **View** to review the column details.
  8. Click **Finish**.  
The data object appears under **Data Object** in the project or folder in the **Object Explorer** view.

## Tableau V3 Data Object Write Operation Properties

Tableau data object write operation properties include run-time and advanced properties that apply to the Tableau V3 data object.

The Developer tool displays advanced properties for the Tableau V3 data object operation in the **Advanced** view.

The following table describes the advanced properties that you can configure for a Tableau V3 data object write operation:

Property	Description
Extract File Path	The file path where you want to save the generated Tableau <code>.hyper</code> file. Ensure that the file path is on the machine where the Data Integration Service runs. The path is a temporary location for Tableau Server and Tableau Online. Default is the location of the target file specified in the Tableau V3 connection properties.
Extract File Name	Name for the Tableau data extract file with the <code>.hyper</code> extension. Default is the file name you specified when creating the target object. If the operation is for Tableau Server or Tableau Online, the file gets deleted after the Data Integration Service publishes the <code>.hyper</code> file to Tableau Server or Tableau Online. To publish a TWDX file to Tableau, you must provide the extract file name <code>salesforce_opportunity.hyper</code> defined in the template.

Property	Description
Target Operation	<p>Creates, appends, or overwrites the <code>.hyper</code> file on the local machine, Tableau Server, or Tableau Online, as specified in the Tableau V3 connection properties.</p> <p>Select one of the following options to publish the <code>.hyper</code> file:</p> <p><b>Create</b></p> <p>Creates a <code>.hyper</code> file. Ensure that a <code>.hyper</code> file with the same name does not exist.</p> <p><b>Append</b></p> <p>Adds data to an existing <code>.hyper</code> file.</p> <p><b>Note:</b> Applicable if there is an existing <code>.hyper</code> file.</p> <p><b>Overwrite</b></p> <p>Deletes the existing <code>.hyper</code> file and creates a new <code>.hyper</code> file.</p>
Project Name	<p>Name of the project within a specific site on Tableau Server or Tableau Online where you want to publish the Tableau <code>.hyper</code> file. By default, the Tableau V3 connection publishes the <code>.hyper</code> file to the default project on the site that you specify on Tableau Server.</p> <p><b>Note:</b> You must enter the <b>Project Name</b> as <b>Default</b> to publish the <code>.hyper</code> file to the default project within a specific site on Tableau Server.</p>
Data Source	<p>Name of the Tableau <code>.hyper</code> file that you want to publish to Tableau Server or Tableau Online. If you do not specify a data source name, the default Tableau data extract file name remains the source name.</p> <p>If you do not specify a data source name, the extract file name remains the data source name. If you do not specify both the data source name or the extract file name, the metadata file name or the target <code>.hyper</code> file name remains the source name.</p>
Workbook Name	<p>Name for the workbook that you want to publish to Tableau.</p> <p>If you do not specify a workbook name, the name of the TWB template file remains the workbook name.</p> <p><b>Note:</b> Do not add the <code>.twbx</code> extension in the workbook name as PowerExchange for Tableau V3 adds the extension automatically.</p>
Workbook Template File Name	<p>Name and path of the Tableau workbook template (TWB) file or Tableau packaged workbook file (TWBX) that you want to apply to the <code>.hyper</code> file to generate a TWBX file.</p> <p>You must provide the absolute path along with the template file name with the extension. For example, <code>/home/filename.twbx</code></p> <p><b>Note:</b> You must ensure that the workbook is of extract type when you provide the TWB or TWBX file.</p>
Target Schema Strategy	<p>Retains the existing target tables.</p> <p><b>Note:</b> You must select the <b>RETAIN - Load into existing table schema</b> option to run the mapping successfully.</p>

## Creating a Tableau V3 Data Object Write Operation

You can create a Tableau V3 data object write operation from a Tableau V3 data object.

Perform the following steps to create a Tableau V3 data object write operation:

1. Select the data object in the **Object Explorer** view.

2. Right-click and select **New > Data Object Operation**.

The **Data Object Operation** dialog box appears.

3. Enter a name for the data object operation.
4. Select the type of data object operation.
5. Select **Extracts Write** to create a write operation.
6. Click **Add**.

The **Select a resource** dialog box appears.

7. Select the resource for which you want to create the data object operation and click **OK**.
8. Click **Finish**.

The Developer tool creates the data object operation for the selected data object.

Open the Tableau V3 data object operation to edit the input properties in the **Advanced** view.

## CHAPTER 5

# Tableau V3 Mappings

This chapter includes the following topics:

- [Tableau V3 Mappings Overview, 21](#)
- [Tableau V3 Mapping Example, 21](#)

## Tableau V3 Mappings Overview

After you create a Tableau V3 data object operation, you can develop a Tableau V3 mapping.

You can add a Tableau V3 data object operation to a Tableau V3 mapping as a target. Validate and run the mapping to integrate and transform source data and generate the Tableau V3 `.hyper` file. You can edit the Tableau V3 data object operation run-time properties to modify the default values. You can also add advanced run-time properties to publish the Tableau `.hyper` file to Tableau Online or Tableau Server.

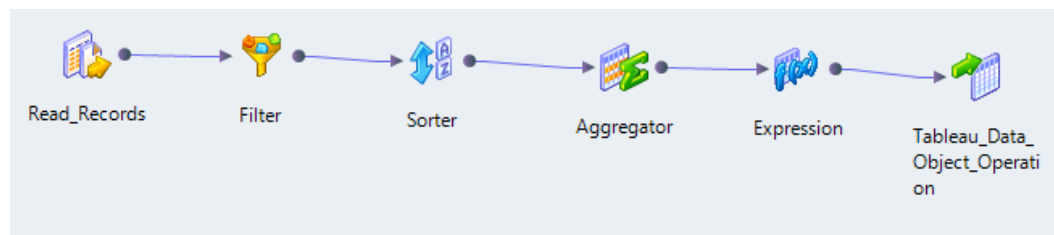
**Note:** You can validate and run mappings in the native environment.

## Tableau V3 Mapping Example

You work in the retail industry, and business analysts in your enterprise need to analyze product sales trends based on region.

The sales record files contain columns with information about products that are sold in multiple outlets and regions. You consolidate the data in the sales record files that you receive through the day. You can then perform transformations based on your requirements.

The following image shows a Tableau V3 mapping:



You use the following objects in the Tableau V3 mapping:

### Flat file data object

The source for the mapping is a flat file data object that contains the product sales data.

Create a flat file data object and specify the sales record as the resource for the data object. Source columns in the flat file data object include Region ID, Product ID, Quantity, and Cost. Configure the read properties of the data object.

### Transformations

Add transformations to get aggregate data about the product sales in a particular region.

- The Filter transformation filters the data in the sales record files based on the value you specify for the region ID column.  
The Data Integration Service returns the rows that meet the filter condition.
- The Sorter transformation sorts the data in ascending order based on the region ID.
- The Aggregator transformation collects statistics about product sales for a particular region.  
Use the result of the Sorter transformation as an input to the Aggregator transformation. You can increase Aggregator transformation performance with the sorted input option.

### Tableau V3 data object write operation

The target of the mapping is a Tableau V3 data object write operation. Create a Tableau V3 data object and then create a Tableau V3 data object write operation to generate the Tableau `.hyper` file.

Specify the absolute path and name of the Tableau `.hyper` file to which you want to write the data. You must then specify the content URL for a specific site on Tableau Server where you want to publish the Tableau `.hyper` file.

When you run the mapping, the Data Integration Service writes the sales information to a target `.hyper` file and publishes the `.hyper` file to Tableau Server. You can then visualize the sales data categorized by region in Tableau Server.

## CHAPTER 6

# Data Type Reference

This chapter includes the following topics:

- [Data Type Reference Overview, 23](#)
- [Tableau V3 and Transformation Data Types, 24](#)
- [Decimal Data Type, 25](#)
- [Duration Data Type, 26](#)

## Data Type Reference Overview

Informatica Developer uses the following data types in Tableau V3 mappings:

### **Tableau native data types**

Tableau data types appear in the physical data object column properties.

### **Transformation data types**

Set of data types that appear in the transformations. They are internal data types based on ANSI SQL-92 generic data types, which the Data Integration Service uses to move data across platforms.

Transformation data types appear in all transformations in a mapping.

When the Data Integration Service reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When the Data Integration Service writes to a target, it converts the transformation data types to the comparable native data types.

# Tableau V3 and Transformation Data Types

The following table lists the Tableau V3 data types that the Data Integration Service supports and the corresponding transformation data types:

Tableau V3 Data Type	Transformation Data Type	Range and Description
Integer	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Double	Double	Double-precision floating-point numeric value. Precision 15
Date	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. Precision of 29, scale of 9 (precision to nanosecond)
DateTime	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. Precision of 29, scale of 9 (precision to nanosecond)
unicode_string	String, Text, Bigint, or Decimal	The Data Integration Service performs an implicit conversion of String, Text, Bigint, or Decimal to unicode_string: String: - 1 to 104,857,600 characters - Fixed-length or varying-length string Text: - 1 to 104,857,600 characters - Fixed-length or varying-length string Bigint: - 9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 - Precision of 19, scale of 0 - Integer value Decimal: - Precision 1 to 28 digits, scale 0 to 28 - Decimal value with declared precision and scale. Scale must be less than or equal to precision.



Tableau V3 Data Type	Transformation Data Type	Range and Description
char_string	String, Text, Bigint, or Decimal	<p>The Data Integration Service performs an implicit conversion of String, Text, Bigint, or Decimal to char_string:</p> <p>String:</p> <ul style="list-style-type: none"> <li>- 1 to 104,857,600 characters</li> <li>- Fixed-length or varying-length string</li> </ul> <p>Text:</p> <ul style="list-style-type: none"> <li>- 1 to 104,857,600 characters</li> <li>- Fixed-length or varying-length string</li> </ul> <p>Bigint:</p> <ul style="list-style-type: none"> <li>- 9,223,372,036,854,775,808 to 9,223,372,036,854,775,807</li> <li>- Precision of 19, scale of 0</li> <li>- Integer value</li> </ul> <p>Decimal:</p> <ul style="list-style-type: none"> <li>- Precision 1 to 28 digits, scale 0 to 28</li> <li>- Decimal value with declared precision and scale. Scale must be less than or equal to precision.</li> </ul>
boolean	String	1 to 104,857,600 characters. Fixed-length or varying-length string. Valid values are True and False.
duration	String	Valid values for hours are integer values between 0 and 23. Valid values for minutes and seconds are integer values between 0 and 59. If there is no value for any field, specify 0.

## Decimal Data Type

When you read data as Decimal in the reader object, use String or Double instead of the Decimal data type for better performance.

As Tableau does not support the Decimal data type, you must change the Decimal data type to String data type that Tableau supports. Change the Decimal data type to String data type in the input wizard of the Tableau data object and char\_string or unicode\_string in the output wizard of the Tableau data object.

To write the Decimal data type to Double data type supported by Tableau, change the Decimal data type to Double data type in the input wizard of the Tableau data object. The Data Integration Service performs an implicit conversion of Decimal data type to a comparable native data type, unicode or char\_string, that Tableau supports.

## Duration Data Type

Duration is specified in days, hours, minutes, seconds, and milliseconds. All the values must be integers. You must change the String data type that arrives from different source fields to a single string value and then map this string value to the Duration data type in the target operation.

For example, the Data Integration Service reads data from five different source fields of String data type, such as, 5 days, 10 hours, 21 minutes, and 35 seconds. Use the Expression transformation to concatenate the input string values to a single string value of comma-separated values, such as 5,10,21,35,0.

Map the string output received from the Expression transformation to Duration data type. Use the single string value as the input value and duration as the output value in the target operation of the mapping.

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