



Informatica® PowerExchange for OData
10.1.1

User Guide

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Preface

The *Informatica PowerExchange® for OData User Guide* provides information about reading data from an OData provider that exposes data through an OData service. It is written for database administrators and developers who create mappings to read data from an OData resource.

This book assumes that you have knowledge of OData, Informatica Developer, and the database engines and systems in your environment.

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CHAPTER 1

Introduction to PowerExchange for OData

This chapter includes the following topics:

- [PowerExchange for OData Overview, 8](#)
- [Introduction to OData, 8](#)

PowerExchange for OData Overview

You can use PowerExchange for OData to read data from an OData provider that exposes data through an OData service.

When you use PowerExchange for OData, you do not need to use multiple products to connect to different databases and applications. If the databases and applications expose data through an OData service, you can use PowerExchange for OData to connect to them.

You can also run a profile against OData data objects.

Introduction to OData

The Open Data protocol is used to exchange data over the Web. It is based on HTTP and uses REST methods to manipulate the data.

The OData server hosts data and the OData clients interact with the server to access and manipulate the data. An end-point on a server is called the OData service.

To interact with the OData service and manipulate the data, clients form an URI and use the HTTP verbs such as GET, PUT, PATCH, POST, and DELETE. The data is transferred between the server and client in an ATOM or JSON format.

An OData service exposes data through an OData URL. When you use PowerExchange for OData, you specify the OData URL in the OData connection. The Developer tool connects to the OData service and displays the OData entities or resources from which you can read data. You can import an OData resource and create an OData data object based on the resource. You can then create a data object read operation and add it as a source in a mapping to read data from the OData resource.

CHAPTER 2

PowerExchange for OData Configuration

This chapter includes the following topics:

- [PowerExchange for OData Configuration Overview, 9](#)
- [Prerequisites, 9](#)

PowerExchange for OData Configuration Overview

PowerExchange for OData installs with the Informatica services and clients. You enable PowerExchange for OData with a license key.

Before you use PowerExchange for OData, complete the prerequisites.

Prerequisites

Before you use PowerExchange for OData, perform the following tasks:

1. Install the Informatica services.
2. Create a Data Integration Service and a Model Repository Service in the Informatica domain.
3. Install the Informatica clients. When you install the Informatica clients, the Developer tool is installed.
4. To configure a secure connection with the OData server over SSL or TLS, add the trust certificates to the cacerts keystore in the JRE.

The cacerts keystore is located in the following directory:

```
<Informatica Installation Directory>\java\jre\lib\security
```

For example, use the following syntax to add the certificate `certificate.cer` to the cacerts keystore:

```
<Informatica Installation Directory>\java\bin\keytool -import -alias <certificate alias>  
-file certificate.cer -keystore <Informatica Installation Directory>\java\jre\lib  
\security\cacerts -v
```

CHAPTER 3

OData Connections

This chapter includes the following topics:

- [OData Connection Overview, 10](#)
- [SSL or TLS Authentication for the OData Server, 10](#)
- [OData Connection Properties, 11](#)
- [infacmd Connection Properties, 12](#)
- [Creating an OData Connection, 12](#)

OData Connection Overview

An OData service exposes data through an OData URL. Use an OData connection to access the OData URL that exposes the data that you want to read.

Create an OData connection to create OData data objects, preview data, and run mappings. When you create an OData connection, you define the connection attributes that the Developer tool uses to connect to the OData URL.

Use the Developer tool, Administrator tool, or infacmd to create an OData connection.

SSL or TLS Authentication for the OData Server

You can use the Secure Sockets Layer (SSL) protocol or Transport Layer Security (TLS) protocol to configure a secure connection between the Developer tool and the OData server.

To configure a secure connection between the Developer tool and the OData server, define the security type in the OData connection. You must also define the file name and password for the truststore file and keystore file of the OData server.

The truststore file contains a list of Certificate Authorities (CAs) that the Developer tool uses to authenticate the OData server. The keystore file contains the private key for the OData server.

OData Connection Properties

Use an OData connection to access an OData URL. The OData connection is a Web connection. You can create and manage an OData connection in the Administrator tool or the Developer tool.

Note: The order of the connection properties might vary depending on the tool where you view them.

The following table describes the OData connection properties:

Property	Description
Name	Name of the connection. The name is not case sensitive and must be unique within the domain. The name cannot exceed 128 characters, contain spaces, or contain the following special characters: ~ ` ! \$ % ^ & * () - + = { [] } \ : ; " ' < , > . ? /
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.
Description	Description of the connection. The description cannot exceed 4,000 characters.
Location	Domain where you want to create the connection.
Type	Connection type. Select OData .
User name	Optional. User name with the appropriate permissions to read data from the OData resource.
Password	Optional. Password for the OData URL user name.
URL	OData service root URL that exposes the data that you want to read.
Security Type	Optional. Security protocol that the Developer tool must use to establish a secure connection with the OData server. Select one of the following values: - None - SSL - TLS Default is None.
TrustStore File Name	Required if you select a security type. Name of the truststore file that contains the public certificate for the OData server. Default is infa_truststore.jks.
Password	Required if you select a security type. Password for the truststore file that contains the public certificate for the OData server.
KeyStore File Name	Required if you select a security type. Name of the keystore file that contains the private key for the OData server. Default is infa_truststore.jks.
Password	Required if you select a security type. Password for the keystore file that contains the private key for the OData server.

infacmd Connection Properties

You can create an OData connection with the infacmd isp CreateConnection command. You can update an OData connection with the infacmd isp UpdateConnection command.

To create an OData connection, enter the connection options in the following format:

... -o option_name=value option_name=value ...

To enter multiple options, separate them with a space. To enter a value that contains a space or nonalphanumeric character, enclose the value in quotation marks.

For example, enter the following command:

```
infacmd.sh createconnection -dn Domain_Name -un Administrator -pd Administrator -cn CLI_Odata  
-ct ODATA -cun HANA_USER -cpd "password" -o URL='http://hana-prod.informatica.com:8000/  
infaworld/Projects/ORDERS_CUSTOMERS.xsodata' securityType="NONE"  
trustStoreFileName="FileName" trustStorePassword="FilePassword"  
keyStoreFileName="keyStoreFile" keyStorePassword="KeyStorepassword"
```

The following table describes the OData connection options for the infacmd isp CreateConnection and UpdateConnection commands:

Property	Description
URL	Required. OData service root URL that exposes the data that you want to read.
securityType	Optional. Security protocol that the Developer tool must use to establish a secure connection with the OData server. Enter one of the following values: <ul style="list-style-type: none">- None- SSL- TLS
trustStoreFileName	Required if you enter a security type. Name of the truststore file that contains the public certificate for the OData server.
trustStorePassword	Required if you enter a security type. Password for the truststore file that contains the public certificate for the OData server.
keyStoreFileName	Required if you enter a security type. Name of the keystore file that contains the private key for the OData server.
keyStorePassword	Required if you enter a security type. Password for the keystore file that contains the private key for the OData server.

Creating an OData Connection

Before you import OData data objects or run mappings, create an OData connection.

1. Click **Window > Preferences**.
2. Select **Informatica > Connections**.

3. Expand the domain in the **Available Connections** list.
4. Select **Web** and then click **Add**.
5. Enter a connection name.
6. Optionally, enter a connection ID and description.
7. Select the domain where you want to create the connection.
8. Select the connection type as **OData**.
9. Click **Next**.
10. Configure the connection properties.
11. Click **Test Connection** to verify the connection to the OData URL.
12. Click **Finish**.

CHAPTER 4

OData Data Objects and Mappings

This chapter includes the following topics:

- [OData Data Object and Mapping Overview, 14](#)
- [OData Data Object Properties, 15](#)
- [OData Data Object Read Operation Properties, 15](#)
- [Output Properties of a Data Object Read Operation, 15](#)
- [Importing an OData Data Object, 18](#)
- [Creating an OData Data Object Read Operation, 18](#)

OData Data Object and Mapping Overview

An OData data object is a physical data object that uses an OData resource as a source. An OData data object is the representation of data that is based on an OData resource exposed by an OData URL.

To create an OData data object, import metadata from the OData URL into the Developer tool. The OData protocol uses the Entity Data Model (EDM), which represents each resource as an entity. A collection of entities is called an entity set. When you connect to an OData URL, the Developer tool displays the entity set that the OData URL exposes. You can view the entities or resources that the entity set contains and select the OData resource from which you want to read data.

Create a data object read operation based on the OData data object. Then, configure the data object read operation properties to determine how the Data Integration Service must read data from the OData resource.

After you configure an OData data object read operation, you can create a mapping to read data from the OData resource. Add the data object read operation as a source in the mapping. You can then add transformations and a target in the mapping.

Validate and run the mapping. You can also add the mapping to a Mapping task in a workflow and run the workflow.

OData Data Object Properties

The OData **Overview** view displays general information about the OData data object and the object properties that apply to the OData resource that you import.

General Properties

You can configure the following general properties for an OData data object:

- Name. Name of the OData data object.
- Description. Description of the OData data object.
- Connection. Name of the OData connection. Click **Browse** to select a different OData connection.

Object Properties

You can configure the following general properties and column properties for the OData resource that you add in the data object:

- Name. Business name of the OData resource.
- Description. Description of the OData resource.
- Native Name. Name of the OData resource including the entity set that contains the resource.
- Path Information. Path to the OData resource.
- Column Properties. Name, native name, data type, precision, scale, and description of the columns in the OData resource.
- Keys. Enter a primary key name and select the key columns.

OData Data Object Read Operation Properties

The Data Integration Service reads data from an OData URL based on the data object read operation properties that you specify.

When you create a data object read operation, the Developer tool creates a Source transformation and an Output transformation. The Source transformation is named after the resource and represents the data that the Data Integration Service reads from the OData resource. Select the Source transformation to view data such as the name and description of the OData resource.

The Output transformation represents the data that the Data Integration Service passes into the mapping pipeline. Select the Output transformation to edit the ports, query, run-time, and advanced properties.

Output Properties of a Data Object Read Operation

The Output transformation defines the run-time properties that the Data Integration Service uses to read data from the OData resource.

In the Output transformation, you can also edit the port properties and filter condition, and select a different OData connection.

Ports Properties

The ports properties list the name, data type, precision, scale, and description for all the ports that the data object read operation contains.

You can configure the following ports properties in the data object read operation:

Property	Description
Name	Name of the port.
Type	Data type of the port.
Precision	Maximum number of digits for numeric data types or maximum number of characters for string data types. The precision includes the scale for numeric data types.
Scale	Maximum number of digits after the decimal point for numeric values.
Description	Description of the port.

Sources Properties

Use the **Sources** tab to update the list of OData resources from which you want to read data. You can read data from multiple OData resources by using the same data object.

Query Properties

Use the **Query** tab to specify a filter condition. You can specify a native filter expression or a platform filter expression.

Native Expression

When you use the native expression, you use the standard OData syntax for filter expressions.

You can define a native filter expression to select a subset of entries from the OData resource. For example, you can enter the following filter condition to select records that have the company name defined as Alfreds:

```
substringof('Alfreds', CompanyName) eq true
```

For information about the operators and functions that you can use in a filter condition, see the OData documentation.

Platform Expression

You can use the platform filter expression to select specific records from OData resources based on the filter condition that you specify.

The following table describes the properties that you can specify when you use the platform expression filter:

Property	Description
Expression Type	Type of filter expression that you want to use to filter records. Select Platform Expression .
Left Field	Column on which you want to apply the filter condition.
Operator	Simple operators that you can use to filter records. You can select one of the following operators: =, !=, <, <=, >, >=
Right Field	Value based on which you want to filter the records. You can also parameterize the value.

Run-time Properties

The run-time properties display the name of the connection that the Data Integration Service uses to read data from the OData resource. You can select a different connection or parameterize the connection.

Advanced Properties

The advanced properties determine how the Data Integration Service reads data from the OData resource.

You can configure the following advanced properties in the data object read operation:

Data Serialization Format

Defines the format in which the data will be transferred over the network. Select the data serialization format based on the format that the OData resource supports.

You can select one of the following values:

- ATOM/XML
- JSON

Default is ATOM/XML.

Maximum Number of Rows

Defines the maximum number of rows that the Data Integration Service must read starting from row 1.

For example, you can set this property to 10 to read only the first 10 rows in an OData resource.

Default is 0. A value of zero means that the Data Integration Service will ignore this property and read all the rows that the OData resource contains.

Number of Rows to Skip

Defines the number of rows that the Data Integration Service must skip starting from row 1.

For example, you can set this property to 10 to skip the first 10 rows in an OData resource and read from the eleventh row.

Default is 0. A value of zero means that the Data Integration Service will ignore this property and read all the rows that the OData resource contains. It will not skip any row.

Importing an OData Data Object

Import an OData data object to specify the OData resource from which you want to read data. You can then create a data object read operation based on the data object.

1. Select a project or folder in the **Object Explorer** view.
2. Click **File > New > Data Object**.
3. Select **OData Data Object** and click **Next**.
The **New OData 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. Click **Browse** next to the **Connection** option and select the OData connection from which you want to import the OData URL metadata.
7. To add a resource from the OData URL, click **Add** next to the **Selected Resources** option.
The **Add Resource** dialog box appears.
8. On the left pane, expand the OData connection and click **EntitySet**.
A list of OData resources appears on the right pane.
9. Select the resource that you want to add and click **OK**.
You can add multiple resources to an OData data object.
10. Click **Finish**.
The data object appears under Physical Data Objects in the project or folder in the **Object Explorer** view.

Creating an OData Data Object Read Operation

Create an OData data object read operation from an OData data object. You can then add the read operation as a source in a mapping.

1. Select the OData data object in the **Object Explorer** view.
2. Right-click the data object and select **New > Data Object Operation**.
The **Data Object Operation** dialog box appears.
3. Enter a name for the data object read operation.
4. Click **Add**.
The **Select Resources** dialog box appears.
5. Select the OData resource for which you want to create the data object read operation and click **OK**.
6. Click **Finish**.

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

APPENDIX A

Data Type Reference

This appendix includes the following topics:

- [Data Type Reference Overview, 19](#)
- [OData and Transformation Data Types, 19](#)

Data Type Reference Overview

Informatica Developer uses the following data types in OData mappings:

- OData native data types. OData 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.

OData and Transformation Data Types

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

OData Data Type	Transformation Data Type	Range and Description
Binary	Binary	1 to 104,857,600 bytes
Boolean	String	1 to 104,857,600 characters
Byte	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
DateTime	Date/Time	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0

OData Data Type	Transformation Data Type	Range and Description
DateTimeOffset	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)
Decimal	Decimal	Precision 1 to 28, scale 0 to 28
Double	Double	Precision 15
Float	Double	Precision 15
Guid	String	1 to 104,857,600 characters
Int16	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Int32	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Int64	Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0
SByte	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Single	Double	Precision 15
String	String	1 to 104,857,600 characters
Time	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)

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