



Informatica® PowerExchange for Google  
Analytics

10.2.2

# User Guide

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# Preface

The *Informatica PowerExchange for Google Analytics User Guide* provides information about extracting data from Google Analytics. This guide is written for database administrators and developers who are responsible for developing mappings that extract data from Google Analytics. This guide assumes you have knowledge of Google Analytics and Informatica Data Services.

## 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).

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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 Google Analytics

This chapter includes the following topics:

- [PowerExchange for Google Analytics Overview, 7](#)
- [Introduction to Google Analytics, 7](#)
- [Google Analytics Supported Reports, 8](#)

## PowerExchange for Google Analytics Overview

You can use PowerExchange for Google Analytics to extract data from Google Analytics.

You can use Google Analytics objects as sources in mappings. When you use Google Analytics objects in mappings, you must configure properties specific to Google Analytics.

You can validate and run Google Analytics mappings in the native environment or on the Spark engine in the Hadoop environment. When you run a mapping, PowerExchange for Google Analytics uses the JAVA client libraries of the Google APIs to integrate with Google Analytics.

## Introduction to Google Analytics

Google Analytics is a premium web analytics service offered by Google that tracks and reports website traffic. Google Analytics helps you analyze visitor traffic and represent a complete picture of your audience

and their needs. It gives actionable insights into how visitors find and use your site and how you can optimize the website's performance.

## Google Analytics Supported Reports

A Google Analytics report contains metrics and dimensions. Dimensions are attributes of the data collected from the website. Metrics are quantitative measurements.

The Google Analytics Core Reporting API v3 that PowerExchange for Google Analytics supports can only process reports that contain both metrics and dimensions or metrics only.

PowerExchange for Google Analytics supports the following Google Analytics reports:

- Adwords
- Adsense
- Ad Exchange
- App Tracking
- Audience
- Channel Grouping
- Content Experiments
- Content Grouping
- Custom Variables or Columns
- DoubleClick Bid Manager
- DoubleClick Campaign Manager
- DoubleClick for Publishers
- DoubleClick for Publishers Backfill
- DoubleClick Search
- Ecommerce
- Event Tracking
- Exceptions
- Geo Network
- Goal Conversion
- Internal Search
- Lifetime Value and Cohorts
- Page Tracking
- Platform or Device
- Related Products
- Session
- Site Speed
- Social Interactions
- Social Activities



- System
- Time
- Traffic Sources
- User
- User Timings

**Note:** Adsense, Ad Exchange, DoubleClick for Publishers, DoubleClick for Publishers Backfill, and Site Speed reports contain only metrics.

When you create a Google Analytics data object, you can select reports from the following datasets in the **Package Explorer**:

- ga
- infaCustom

The **infaCustom** dataset contains the **infaCustomGroup** report. The **infaCustomGroup** report contains dimensions and metrics from all the Google Analytics reports.

To retrieve data from multiple Google Analytics reports, you must select the **infaCustomGroup** report in the **infaCustom** dataset.

## CHAPTER 2

# PowerExchange for Google Analytics Configuration

This chapter includes the following topics:

- [PowerExchange for Google Analytics Configuration Overview, 10](#)
- [Prerequisites, 10](#)

## PowerExchange for Google Analytics Configuration Overview

The PowerExchange for Google Analytics installs with Informatica Services. You can enable PowerExchange for Google Analytics with a license key.

To configure PowerExchange for Google Analytics, complete the prerequisites.

## Prerequisites

Before you install PowerExchange for Google Analytics, complete the following tasks:

1. Install and configure Informatica Services.
2. Install and configure the Developer tool. You can install the Developer tool when you install Informatica clients.
3. Create and configure a Model Repository Service and a Data Integration Service in the Informatica domain.
4. Verify that you have write permissions on all the directories within the `<Informatica installation directory> directory`.
5. Ensure that the PowerExchange for Google Analytics license is activated.
6. Ensure that you have a service account in your Google account to access Google Analytics.
7. Ensure that you selected the **Furnish a new private key** and **JSON** as the **Key type** and saved the generated key as `client_secrets.json`.
8. Ensure that you selected the **Enable G Suite Domain-wide Delegation** property.

9. Ensure you have the `client_email` and `private_key` values for the service account. You will need to enter these details when you add a user to the Google Analytics account and also when you create a Google Analytics connection in Informatica Developer.
10. Ensure that you have enabled the **Analytics API** for your service account. PowerExchange for Google Analytics uses the Google Analytics Core Reporting APIs to integrate with Google Analytics.
11. Create an account, property, and view in Google Analytics.
12. Verify that you have the following permissions for the Google Analytics account:
  - Edit
  - Collaborate
  - Read and Analyze
  - Manage Users
13. Ensure you have a **View ID** that is generated for the view that you created. You will need to enter the View ID when you create mappings in the Developer tool.

## CHAPTER 3

# Google Analytics Connections

This chapter includes the following topics:

- [Google Analytics Connections Overview, 12](#)
- [Google Analytics Connection Properties, 12](#)
- [Creating a Google Analytics Connection, 13](#)

## Google Analytics Connections Overview

Use a Google Analytics connection to access a Google Analytics report.

Use the Google Analytics connection to import Google Analytics reports, create data objects, preview data, and run mappings. When you create a Google Analytics connection, you define the connection attributes that the Developer tool uses to connect to the Google Analytics reports.

Use the Developer tool, Administrator tool, or infacmd to create a Google Analytics connection.

## Google Analytics Connection Properties

When you set up a Google Analytics connection, you must configure the connection properties.

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

The following table describes the Google Analytics connection properties:

Property	Description
Name	The name of the connection. The name is not case sensitive and must be unique within the domain. You can change this property after you create the connection. 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. The ID 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	Optional. The description of the connection. The description cannot exceed 4,000 characters.
Location	The domain where you want to create the connection.
Type	The connection type. Select <b>Google Analytics</b> .
Service Account ID	Specifies the client_email value present in the JSON file that you download after you create a service account.
Service Account Key	Specifies the private_key value present in the JSON file that you download after you create a service account.
APIVersion	API that PowerExchange for Google Analytics uses to read from Google Analytics reports. Select <b>Core Reporting API v3</b> . <b>Note:</b> PowerExchange for Google Analytics does not support Analytics Reporting API v4.

## Creating a Google Analytics Connection

Create a Google Analytics connection before you create a Google Analytics data object to read data from a Google Analytics report.

1. In the Developer tool, click **Window > Preferences**.
2. Select **Informatica > Connections**.
3. Expand the domain in the **Available Connections**.
4. Select the connection type **Enterprise Application > Google Analytics**, and click **Add**.
5. Enter a connection name and an optional description.
6. Select **Google Analytics** as the connection type.
7. Click **Next**.
8. Configure the connection properties.
9. Click **Test Connection** to verify the connection to Google Analytics.
10. Click **Finish**.

## CHAPTER 4

# PowerExchange for Google Analytics Data Objects

This chapter includes the following topics:

- [Google Analytics Data Object Overview, 14](#)
- [Google Analytics Data Object Properties, 14](#)
- [Google Analytics Data Object Read Operation, 15](#)
- [Creating a Google Analytics Data Object, 16](#)
- [Creating a Google Analytics Data Object Operation, 17](#)

## Google Analytics Data Object Overview

A Google Analytics data object is a physical data object that uses Google Analytics as a source. A Google Analytics data object is a physical data object that represents data based on a Google Analytics report.

You can configure the data object read operation properties that determine how the Data Integration Service reads data from Google Analytics sources.

Create a Google Analytics data object in the Developer tool. PowerExchange for Google Analytics creates the data object read operation for the Google Analytics data object. You can edit the advanced properties of the data object read operation and add it to a mapping.

## Google Analytics Data Object Properties

Specify the data object properties when you create the data object.

The following table describes the properties that you configure for a Google Analytics data object:

Property	Description
Name	Name of the Google Analytics data object.
Location	The project or folder in the Model Repository Service where you want to store the Google Analytics data object.
Connection	Name of the Google Analytics connection.

## Google Analytics Data Object Read Operation

Create a mapping with a Google Analytics data object read operation to read data from Google Analytics.

### Output Properties of the Data Object Read Operation

The output properties represent the data that the Data Integration Service passes into the mapping pipeline. Select the output properties to configure advanced properties of the data object read operation.

The output properties of the data object read operation include general properties that apply to the data object operation. The output properties also include source, query, run-time, and advanced properties that apply to the Google Analytics data object.

You can view and change the output properties of the data object read operation from the **General**, **Sources**, **Query**, **Run-time**, and **Advanced** tabs.

#### General Properties

The general properties display the name and description of the data object read operation.

#### Sources Properties

The sources properties list the Google Analytics object used in the data object read operation. You cannot join data from multiple Google Analytics sources.

#### Query Properties

Use the **Query** tab to select specific records from a Google Analytics report.

The following table describes the query properties that you configure for a data object read operation:

Property	Description
Query	<p>Filter value in a read operation. The filter specifies the where clause of the select statement. Use a filter to reduce the number of rows that the Data Integration Service reads from the source. When you enter a source filter, the Developer tool adds a WHERE clause to the default query.</p> <p>You can use the Native or Platform expression to select specific records.</p>

## Run-time Properties

The run-time properties displays the name of the connection that the Data Integration Service uses to read data from the Google Analytics report.

## Advanced Properties

The Data Integration Service reads data from Google Analytics based on the data object read operation.

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

The following table describes the advanced properties for a Google Analytics data object read operation:

Property	Description
View ID	The Google Analytics View ID associated with the Google Analytics project.
StartDate	Start date from which PowerExchange for Google Analytics must read the data from a Google Analytics report. You can specify a specific date using the YYYY-MM-DD format. You can also specify relative terms such as <b>today</b> , <b>yesterday</b> , or <b>NdaysAgo</b> .
EndDate	End date till which PowerExchange for Google Analytics must read the data from a Google Analytics report. You can specify a specific date using the YYYY-MM-DD format. You can also specify relative terms such as <b>today</b> , <b>yesterday</b> , or <b>NdaysAgo</b> .
PageSize	Number of rows that PowerExchange for Google Analytics must read from a Google Analytics report.

# Creating a Google Analytics Data Object

Create a Google Analytics data object to add to a mapping.

1. Select a project or folder in the **Object Explorer** view.
2. Click **File > New > Data Object**.
3. Select **GoogleAnalytics Data Object** and click **Next**.  
The **GoogleAnalytics 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 Google Analytics connection from which you want to import the Google Analytics object.
7. To add a resource, click **Add** next to the **Selected Resources** option.  
The **Add Resource** dialog box appears.
8. Select the **ga** or **infaCustom** dataset and select the check box next to the Google Analytics report you want to add.
9. Click **OK**.
10. Click **Finish**.  
The data object appears under Data Objects in the project or folder in the **Object Explorer** view.



# Creating a Google Analytics Data Object Operation

You can create the data object read operation for Google Analytics data objects. You can then add the Google Analytics data object operation to a mapping.

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.  
The **Capabilities** is set to **Read** by default.
3. Enter a name for the data object operation.
4. Click **Add**.  
The **Select Resources** dialog box appears.
5. Select the Google Analytics data object for which you want to create the data object operation and click **OK**.
6. Click **Finish**.

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

## CHAPTER 5

# PowerExchange for Google Analytics Mappings

This chapter includes the following topics:

- [PowerExchange for Google Analytics Mappings Overview, 18](#)
- [Mapping Validation and Run-time Environments, 18](#)

## PowerExchange for Google Analytics Mappings Overview

After you create a Google Analytics data object read operation, you can create a mapping to extract data from a Google Analytics source.

You can define properties in an operation to determine how the Data Integration Service must extract data from a Google Analytics source. When the Data Integration Service extracts data from the source, it converts the data based on the data types associated with the source or the target.

## Mapping Validation and Run-time Environments

You can validate and run mappings in the native environment or with the Spark engine in the Hadoop environment.

The Data Integration Service validates whether the mapping can run in the selected environment. You must validate the mapping for an environment before you run the mapping in that environment.

### Native environment

You can configure the mappings to run in the native environment. When you run mappings in the native environment, the Data Integration Service processes the mapping and runs the mapping from the Developer tool.

### Spark Engine

When you run mappings on the Spark engine, the Data Integration Service pushes the mapping to a Hadoop cluster and processes the mapping on the Spark engine. The Data Integration Service generates an execution plan to run mappings on the Spark engine.

You can view the plan in the Developer tool before you run the mapping and in the Administrator tool after you run the mapping.

For more information about the Hadoop environment and Spark engines, see the *Informatica Big Data Management™ User Guide*.

## CHAPTER 6

# Google Analytics Run-Time Processing

This chapter includes the following topics:

- [Google Analytics Run-Time Processing Overview, 20](#)
- [Filter Expression, 20](#)
- [Parameterization for Google Analytics Sources, 21](#)

## Google Analytics Run-Time Processing Overview

When you create a Google Analytics data object read operation, you define properties that determine how the Data Integration Service reads data from a Google Analytics report.

You can configure parameterization in the run-time properties.

## Filter Expression

To read specific data from a Google Analytics report, you can configure a filter condition to query the Google Analytics reports. You can use the Native or Platform expression to query specific columns in a Google Analytics report.

### Native Expression

You can specify a native expression that uses AND, OR, or nested conditions. The expression that you enter becomes the WHERE clause in the query used to retrieve records from the source.

A Google Analytics filter consists of one or more Boolean expressions. Select **Native Expression** as the **Expression Type** and select the column on which you want to apply the filter condition.

The Boolean expressions use the following format:

```
<datasetName:columnName><Operator><Value>
```

For example,

```
ga:userBucket==100
```

If you use logical operators, add the operators as a prefix to the expression list. Default is blank.

To filter records from an Google Analytics source, set the native expression in the data object read operation.

## Platform Expression

You can use the platform expression to select specific records from a Google Analytics report based on the filter condition you specify.

The following table describes the properties you specify when you use the platform expression to filter records from a Google Analytics report:

Property	Description
Expression Type	The type of filter expression that you want to use to filter records. Select <b>Platform Expression</b> .
Left field	The column on which you want to apply the filter condition. The column names appear in the following format: <code>&lt;reportName&gt;.&lt;datasetName_ColumnName&gt;</code> For example, <code>User.ga_newUsers</code>
Operator	Simple operators you can use to filter records. You can select one of the following operators: <code>=, !=, &lt;, &lt;=, &gt;, and &gt;=</code>
Right field	The value you specify to filter the column.

## Parameterization for Google Analytics Sources

You can parameterize the Google Analytics connection and data object read operation properties to override the mapping properties at run time.

You can parameterize the following read operation properties for a Google Analytics source:

- ViewID
- StartDate
- EndDate
- Page Size

## APPENDIX A

# Google Analytics Data Type Reference

This appendix includes the following topics:

- [Data Type Reference Overview, 22](#)
- [Google Analytics and Transformation Data Types, 22](#)

## Data Type Reference Overview

The Developer tool uses the following data types in Google Analytics mappings:

- Google Analytics native data types. Google Analytics data types appear in Google Analytics definitions in a mapping.
- 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. They 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.

## Google Analytics and Transformation Data Types

The following table lists the Google Analytics data types that the Developer tool supports and the corresponding transformation data types:

Google Analytics Data Type	Transformation Data Type	Range and Description for the Transformation Data Type
CURRENCY	String	1 to 104,857,600 characters
FLOAT	Double	Precision 15
INTEGER	BigInteger	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0

Google Analytics Data Type	Transformation Data Type	Range and Description for the Transformation Data Type
PERCENT	Double	Precision 15
STRING	String	1 to 104,857,600 characters
TIME	Double	Precision 15

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