



TIBCO® Data Virtualization

Google Analytics Adapter Guide

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Google Analytics Adapter

Google Analytics Version Support

The adapter provides a relational view of the Google Analytics profiles in your Google account or across your Google Apps domain. The adapter includes tables that contain often-used dimensions and metrics as columns; additionally, you can customize the table schemas or write your own to combine any valid set of dimensions and metrics. The adapter surfaces the columns available through the Google Analytics Management API and the Google Analytics Core Reporting API. You must enable these APIs by creating a project in the Google Developers Console. See [Connecting to Google](#) for a guide to creating a project and authenticating to the APIs.

SQL Compliance

The [SQL Compliance](#) section shows the SQL syntax supported by the adapter and points out any limitations.

Getting Started

Connecting to Google Analytics

[Basic Tab](#) shows how to authenticate to Google Analytics and configure any necessary connection properties. Additional adapter capabilities can be configured using the available [Connection](#) properties on the Advanced tab. The Advanced Settings section shows how to set up more advanced configurations and troubleshoot connection errors.

Deploying the Google Analytics Adapter

To deploy the adapter, you can execute the `server_util` utility via the command line by

1. Unzip the `tdv.googleanalytics.zip` file to the location of your choice.
2. Open a command prompt window.
3. Navigate to the `<TDV_install_dir>/bin`
4. Enter the `server_util` command with the `-deploy` option:

```
server_util -server <hostname> [-port <port>] -user <user> -  
password <password> -deploy -package <TDV_install_  
dir>/adapters/tdv.googleanalytics/tdv.googleanalytics.jar
```

Note: When deploying a build of an existing adapter, you will need to undeploy the existing adapter using the `server_util` command with the `-undeploy` option.

```
server_util -server <hostname> [-port <port>] -user <user> -password  
<password> -undeploy -version 1 -name GoogleAnalytics
```

Basic Tab

Authenticate via OAuth Authentication

Use the OAuth authentication standard to connect to Google Analytics. You can authenticate with a user account or with a service account. A service account is required to grant organization-wide access scopes to the adapter. The adapter facilitates these authentication flows as described below.

Authenticate with a User Account

Authenticate with a Service Account

Service accounts have silent authentication, without user authentication in the browser. You can also use a service account to delegate enterprise-wide access scopes to the adapter.

You need to create an OAuth application in this flow. See [Creating a Custom OAuth App](#) in the Getting Started section to create and authorize an app. You can then connect to Google Analytics data that the service account has permission to access.

After setting the following connection properties, you are ready to connect:

- InitiateOAuth: Set this to GETANDREFRESH.
- OAuthJWTCertType: Set this to "PFXFile".
- OAuthJWTCert: Set this to the path to the .p12 file you generated.
- OAuthJWTCertPassword: Set this to the password of the .pem file.
- OAuthJWTCertSubject: Set this to "*" to pick the first certificate in the certificate store.
- OAuthJWTSubject (optional): Set this to the email address of the user for whom the application is requesting delegate access. Note that delegate access must be granted by an administrator.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

When you connect the adapter completes the OAuth flow for a service account.

1. Creates and signs the JWT with the claim set required by the adapter.
2. Exchanges the JWT for the access token.
3. Saves OAuth values in OAuthSettingsLocation to be persisted across connections.
4. Submits the JWT for a new access token when the token expires.

Logging

The adapter uses log4j to generate log files. The settings within the log4j configuration file are used by the adapter to determine the type of messages to log. The following categories can be specified:

- Error: Only error messages are logged.
- Info: Both Error and Info messages are logged.
- Debug: Error, Info, and Debug messages are logged.

The Other property of the adapter can be used to set Verbosity to specify the amount of detail to be included in the log file, that is:

```
Verbosity=4;
```

You can use Verbosity to specify the amount of detail to include in the log within a category. The following verbosity levels are mapped to the log4j categories:

- 0 = Error
- 1-2 = Info
- 3-5 = Debug

For example, if the log4j category is set to DEBUG, the Verbosity option can be set to 3 for the minimum amount of debug information or 5 for the maximum amount of debug information.

Note that the log4j settings override the Verbosity level specified. The adapter never logs at a Verbosity level greater than what is configured in the log4j properties. In addition, if Verbosity is set to a level less than the log4j category configured, Verbosity defaults to the minimum value for that particular category. For example, if Verbosity is set to a value less than 3 and the Debug category is specified, the Verbosity defaults to 3.

The following list is a breakdown of the Verbosity levels and the information that they log.

- 1 - Will log the query, the number of rows returned by it, the start of execution and the time taken, and any errors.
- 2 - Will log everything included in Verbosity 1 and HTTP headers.
- 3 - Will additionally log the body of the HTTP requests.
- 4 - Will additionally log transport-level communication with the data source. This includes SSL negotiation.
- 5 - Will additionally log communication with the data source and additional details that may be helpful in troubleshooting problems. This includes interface commands.

Configure Logging for the Google Analytics Adapter

By default, logging is turned on without debugging. If debugging information is desired, uncomment the following line in the TDV Server's log4j.properties file (default location of this file is: C:\Program Files\TIBCO\TDV Server <version>\conf\server):


```
log4j.logger.com.cdata=DEBUG
```

The TDV Server must be restarted after changing the log4j.properties file, which can be accomplished by running the composite.bat script located at: C:\Program Files\TIBCO\TDV Server <version>\bin. Note that reauthenticating to the TDV Studio is required after restarting the server.

Here is an example of the calls:

```
.\composite.bat monitor restart
```

All logs for the adapter are written to the "cs_cdata.log" file as specified in the log4j properties.

Note: The "log4j.logger.com.cdata=DEBUG" option is not required if the **Debug Output Enabled** option is set to true within the TDV Studio. To set this option, navigate to **Administrator > Configuration**. Select **Server > Configuration > Debugging** and set the Debug Output Enabled option to **True**.

Using OAuth Authentication

Use the OAuth authentication standard to connect to Google Analytics. You can authenticate with a user account or a service account. The adapter facilitates this as described below.

Using a User Account to Authenticate to Google Analytics

The user account flow requires the authenticating user to interact with Google Analytics via the browser.

Embedded Credentials

See [Embedded Credentials](#) to connect with the adapter's embedded credentials and skip creating a custom OAuth app.

Custom Credentials

Instead of connecting with the adapter's embedded credentials, you can register an app to obtain the [OAuthClientId](#) and [OAuthClientSecret](#).

When to Create a Custom OAuth App

Creating a custom OAuth app is optional as the adapter is already registered with Google Analytics and you can connect with its embedded credentials. You might want to create a custom OAuth app to change the information displayed when users log into the Google Analytics OAuth endpoint to grant permissions to the adapter.

Using a Service Account to Connect to Google Analytics

Service accounts have silent authentication, without user authentication in the browser. You can also use a service account to delegate enterprise-wide access scopes to the adapter.

You need to create an OAuth application in this flow. You can then connect to Google Analytics data that the service account has permission to access. See [Custom Credentials](#) for an authentication guide.

Creating a Custom OAuth App

See [Creating a Custom OAuth App](#) for a procedure.

Embedded Credentials

Authenticate using the Embedded OAuth Credentials

Desktop Authentication with the Embedded OAuth App

You can connect without setting any connection properties for your user credentials. After setting the following, you are ready to connect:

- [InitiateOAuth](#): Set this to GETANDREFRESH. You can use InitiateOAuth to avoid

repeating the OAuth exchange and manually setting the OAuthAccessToken.

- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

When you connect the adapter opens the OAuth endpoint in your default browser. Log in and grant permissions to the application. The adapter then completes the OAuth process.

1. Extracts the access token from the callback URL and authenticates requests.
2. Obtains a new access token when the old one expires.
3. Saves OAuth values in OAuthSettingsLocation to be persisted across connections.

Custom Credentials

You can use a custom OAuth app to authenticate with a service account or a user account. See [Using OAuth Authentication](#) for more information.

Authenticate with a User Account

Desktop Authentication with a Custom OAuth App

Follow the steps below to authenticate with the credentials for a custom OAuth app. See [Creating a Custom OAuth App](#).

Get and Refresh the OAuth Access Token

After setting the following, you are ready to connect:

- OAuthClientId: Set this to the client Id assigned when you registered your app.
- OAuthClientSecret: Set this to the client secret assigned when you registered your app.
- InitiateOAuth: Set this to GETANDREFRESH. You can use InitiateOAuth to avoid repeating the OAuth exchange and manually setting the OAuthAccessToken.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

When you connect the adapter opens the OAuth endpoint in your default browser. Log in and grant permissions to the application. The adapter then completes the OAuth process:

1. Extracts the access token from the callback URL and authenticates requests.
2. Refreshes the access token when it expires.
3. Saves OAuth values in OAuthSettingsLocation to be persisted across connections.

Authenticate with a Service Account

Service accounts have silent authentication, without user authentication in the browser. You can also use a service account to delegate enterprise-wide access scopes to the adapter.

You need to create an OAuth application in this flow. See [Creating a Custom OAuth App](#) to create and authorize an app. You can then connect to Google Analytics data that the service account has permission to access.

After setting the following connection properties, you are ready to connect:

- InitiateOAuth: Set this to GETANDREFRESH.
- OAuthClientId: Set this to the Client Id in your app settings.
- OAuthClientSecret: Set this to the Client Secret in your app settings.
- OAuthJWTCertType: Set this to "PEMKEY_FILE".
- OAuthJWTCert: Set this to the path to the .pem file you generated.
- OAuthJWTCertPassword: Set this to the password of the .pem file.
- OAuthJWTCertSubject: Set this to "*" to pick the first certificate in the certificate store.
- OAuthJWTSubject: Set this to the email address of the user for whom the application is requesting delegate access. Note that delegate access must be granted by an administrator.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

When you connect the adapter completes the OAuth flow for a service account.

1. Creates and signs the JWT with the claim set required by the adapter.
2. Exchanges the JWT for the access token.

3. Saves OAuth values in OAuthSettingsLocation to be persisted across connections.
4. Submits the JWT for a new access token when the token expires.

Headless Machines

Using OAuth on a Headless Machine

The following sections show how to authenticate a headless server or another machine on which the adapter cannot open a browser. You can authenticate with a user account or with a service account.

Authenticate with a User Account

To authenticate with a user account, you need to authenticate from another machine. Authentication is a two-step process.

1. Instead of installing the adapter on another machine, you can follow the steps below to obtain the OAuthVerifier value. Or, you can install the adapter on another machine and transfer the OAuth authentication values, after you authenticate through the usual browser-based flow.
2. You can then configure the adapter to automatically refresh the access token from the headless machine.

You can follow the headless OAuth authentication flow using the adapter's embedded OAuth credentials or using the OAuth credentials for your custom OAuth app.

Using the Embedded OAuth Credentials

Obtain a Verifier Code

Follow the steps below to authenticate from another machine and obtain the OAuthVerifier connection property:

1. Click the following link to open the [Google Analytics OAuth endpoint](#) in your browser.
2. Log in and grant permissions to the adapter. You are then redirected to the callback URL, which contains the verifier code.

3. Save the value of the verifier code. You will set this in the OAuthVerifier connection property.

On the headless machine, set the following connection properties to obtain the OAuth authentication values.

- OAuthVerifier: Set this to the verifier code.
- InitiateOAuth: Set this to REFRESH.
- OAuthSettingsLocation: Set this to persist the encrypted OAuth authentication values to the specified file.

After the OAuth settings file is generated, set the following properties to connect to data:

- OAuthSettingsLocation: Set this to the file containing the encrypted OAuth authentication values. Make sure this file gives read and write permissions to the adapter to enable the automatic refreshing of the access token.
- InitiateOAuth: Set this to REFRESH.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

Transfer OAuth Settings

Follow the steps below to install the adapter on another machine, authenticate, and then transfer the resulting OAuth values.

On a second machine, install the adapter and connect with the following properties set:

- OAuthSettingsLocation: Set this to a writable text file.
- InitiateOAuth: Set this to GETANDREFRESH.

Test the connection to authenticate in the browser. The resulting authentication values are written, encrypted, to the path specified by OAuthSettingsLocation. Once you have successfully tested the connection, copy the OAuth settings file to your headless machine.

On the headless machine, set the following connection properties to connect to data:

- OAuthSettingsLocation: Set this to the path to your OAuth settings file. Make sure this file gives read and write permissions to the adapter to enable the automatic refreshing of the access token.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile

returned will be used.

Using the Credentials for a Custom OAuth App

Create a Custom OAuth App

Creating a custom OAuth app is optional in the headless OAuth flow; you can skip creating an app by connecting with the adapter's embedded OAuth credentials. You might want to create a custom OAuth app to change the information displayed when users log into Google Analytics to grant permissions to the adapter.

See [Creating a Custom OAuth App](#) for a procedure. You can then follow the procedures below to authenticate and connect to data.

Obtain a Verifier Code

Set the following properties on the headless machine:

- InitiateOAuth: Set this to OFF.
- OAuthClientId: Set this to the Client Id in your app settings.
- OAuthClientSecret: Set this to the Client Secret in your app settings.

You can then follow the steps below to authenticate from another machine and obtain the OAuthVerifier connection property.

1. Call the [GetOAuthAuthorizationURL](#) stored procedure with the CallbackURL input parameter set to the exact Redirect URI you specified in your app settings.
2. Open the returned URL in a browser. Log in and grant permissions to the adapter. You are then redirected to the callback URL, which contains the verifier code.
3. Save the value of the verifier code. You will set this in the OAuthVerifier connection property.

On the headless machine, set the following connection properties to obtain the OAuth authentication values:

- OAuthVerifier: Set this to the verifier code.
- OAuthSettingsLocation: Set this to persist the encrypted OAuth authentication values to the specified file.
- InitiateOAuth: Set this to REFRESH.

After the OAuth settings file is generated, set the following properties to connect to data:

- OAuthSettingsLocation: Set this to the file containing the encrypted OAuth authentication values. Make sure this file gives read and write permissions to the provider to enable the automatic refreshing of the access token.
- InitiateOAuth: Set this to REFRESH.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

Transfer OAuth Settings

Follow the steps below to install the adapter on another machine, authenticate, and then transfer the resulting OAuth values.

On a second machine, install the adapter and connect with the following properties set:

- OAuthSettingsLocation: Set this to a writable text file.
- InitiateOAuth: Set this to GETANDREFRESH.
- OAuthClientId: Set this to the client Id assigned when you registered your app.
- OAuthClientSecret: Set this to the client secret assigned when you registered your app.

Test the connection to authenticate. The resulting authentication values are written, encrypted, to the path specified by OAuthSettingsLocation. Once you have successfully tested the connection, copy the OAuth settings file to your headless machine. On the headless machine, set the following connection properties to connect to data:

- InitiateOAuth: Set this to REFRESH.
- OAuthSettingsLocation: Set this to the path to your OAuth settings file. Make sure this file gives read and write permissions to the adapter to enable the automatic refreshing of the access token.
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

Authenticate with a Service Account

Service accounts have silent authentication, without user authentication in the browser. You can also use a service account to delegate enterprise-wide access scopes to the

adapter.

You need to create an OAuth application in this flow. See [Creating a Custom OAuth App](#) to create and authorize an app. You can then connect to Google Analytics data that the service account has permission to access.

After setting the following connection properties, you are ready to connect:

- InitiateOAuth: Set this to GETANDREFRESH.
- OAuthJWTCertType: Set this to "PFXFILE".
- OAuthJWTCert: Set this to the path to the .p12 file you generated.
- OAuthJWTCertPassword: Set this to the password of the .pem file.
- OAuthJWTCertSubject: Set this to "*" to pick the first certificate in the certificate store.
- OAuthJWTIssuer: In the service accounts section, click Manage Service Accounts and set this field to the email address displayed in the service account Id field.
- OAuthJWTSubject (optional): Set this to your enterprise Id if your subject type is set to "enterprise" or your app user Id if your subject type is set to "user".
- Profile: Set this to the Google Analytics profile or view you want to connect to. This value can be retrieved from the Profiles table. If this is not specified, the first Profile returned will be used.

When you connect the adapter completes the OAuth flow for a service account.

1. Creates and signs the JWT with the claim set required by the adapter.
2. Exchanges the JWT for the access token.
3. Saves OAuth values in OAuthSettingsLocation to be persisted across connections.
4. Submits the JWT for a new access token when the token expires.

Creating a Custom OAuth App

You can use a custom OAuth app to authenticate a service account or a user account. See [Using OAuth Authentication](#) for more information.

Create an OAuth App for User Account Authentication

Follow the procedure below to register an app and obtain the OAuthClientId and OAuthClientSecret.

Create a Custom OAuth App: Desktop

1. Log into the Google API Console and open a project. Select the API Manager from the main menu.
2. In the user consent flow, click Credentials -> Create Credentials -> OAuth Client Id. Click Other. After creating the app, the OAuthClientId and OAuthClientSecret are displayed.
3. Click Library -> Analytics API -> Enable API.

Create an OAuth App for Service Account Authentication

Follow the steps below to create an OAuth application and generate a private key. You will then authorize the service account.

1. Log into the Google API Console and open a project. Select the API Manager from the main menu.
2. Click Create Credentials -> Service Account Key.
3. In the Service Account menu, select New Service Account or select an existing service account.
4. If you are creating a new service account, additionally select one or more roles. You can assign primitive roles at the project level in the IAM and Admin section; other roles enable you to further customize access to Google APIs.
5. In the Key Type section, select the P12 key type.
6. Create the app to download the key pair. The private key's password is displayed: Set this in OAuthJWTCertPassword.
7. In the service accounts section, click Manage Service Accounts and set OAuthJWTIssuer to the email address displayed in the service account Id field.
8. Click Library -> Analytics API -> Enable API.

Retrieving Google Analytics Data

Google Analytics data is organized into various metrics (Sessions, Impressions, AdClicks, etc.), which can be queried over various dimensions (Country, Month, etc.). There are many valid combinations of metrics and dimensions. The adapter surfaces some of the most commonly used combinations as tables for ease of use.

Additionally, the adapter allows you to query all valid combinations, even those not included in the predefined tables, using two schemes: by using the Dimensions and Metrics columns and by defining custom schemas. Refer to [Advanced Queries](#) for more information. Below is a guide to getting started with the default tables.

Selecting Dimensions and Measures

The dimension and metrics are clearly defined for each table and can be seen in the [Data Model](#): Simply select the metrics and the dimensions you are interested in. For example, to find the number of sessions in each month, query the Session metric over the Month dimension. This would return 12 rows: one for each month.

```
SELECT Sessions, Month FROM Traffic
```

To separate out the months in each year, include both the month and the year dimensions in the query:

```
SELECT Sessions, Month, Year FROM Traffic
```

Date Ranges

All Google Analytics reports cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT Sessions, Month, Year FROM Traffic WHERE StartDate='90daysAgo'  
AND EndDate='Today'
```

The supported inputs for StartDate and EndDate in the Google Analytics API are 'today', 'yesterday', 'NdaysAgo' (where N is some number), and an exact date. Starting in the v4 API, up to two separate date ranges can be set in the filter.

SELECT * Query

Unlike most database tables, it is not very helpful to select all metrics and dimensions in a given table. In some cases, it is not even possible to do this since Google Analytics allows a maximum of 7 dimensions and 10 metrics in a single query. The adapter thus interprets the SELECT * query to mean a default set of metrics and dimensions are requested. This includes queries that explicitly select all columns. For schemas with less than 10 metrics, all metrics will be returned. Refer to the individual view's documentation in [Data Model](#) to see which fields are the default for each schema.

Advanced Queries

Google Analytics has a very large number of metrics and dimensions that would clutter table definitions, so the table definitions included with the product only list the most commonly used combinations. We offer two alternatives to this design choice: You can use the Dimensions and Metrics columns to request fields that are not in the default table, or you can define your own table.

Using the Dimensions and Metrics Columns

To request additional dimensions or metrics for any existing table, the recommended approach is to define custom schemas; however, you can also set the Dimensions and Metrics inputs in the WHERE clause. Both inputs take a comma-separated list so that you can specify multiple fields at once. The values will be returned in the corresponding Dimensions and Metrics column in the same order that you submitted them. For example, the following query will query the Traffic table for Sessions, the Goal 1 Conversion Rate, and Goal 1 Completions and group these metrics together by the User Age Bracket dimension:

```
SELECT Sessions, Dimensions, Metrics FROM Traffic WHERE  
Dimensions='UserAgeBracket' AND  
Metrics='Goal1ConversionRate,Goal1Completions'
```

In the results from the query above, the value for UserAgeBracket will be returned in the Dimensions field for each row. The Metrics field will contain a comma-separated value

containing the requested metrics for Goal 1.

Defining Custom Schemas

If you routinely need to request fields that are not available on the standard tables that ship with the adapter, you may want to define your own custom schema so that you can more easily query for the data you need. The [CreateCustomSchema](#) stored procedure can be used to define entirely new tables, or you can modify existing schemas to add the columns you need.

The stored procedure outputs schema files, which have a simple format that makes them easy to edit directly.

Using the CreateCustomSchema Stored Procedure

The adapter also offers the [CreateCustomSchema](#) stored procedure for creating new table definitions. The stored procedure takes a table name, a comma-separated list of metrics, a comma-separated list of dimensions, and an output folder as inputs. Calling it will create a new schema file that you can query like any other table. You will need to set the [Location](#) connection property to the folder containing the new script files in order to access them.

The example stored procedure call below persists the columns of the SELECT query in Using the Dimensions and Metrics Columns:

```
EXEC CreateCustomSchema TableName='Traffic',  
Dimensions='UserAgeBracket',  
Metrics='Sessions,Goal1ConversionRate,Goal1Completions',OutputFolder='C:  
\\Users\\Administrator\\Desktop'
```

Edit an Existing Schema Manually

To add fields to an existing schema, open the corresponding .rsd file in the installation directory for the adapter and follow the steps below:

1. Add an *attr* tag in the *<rsb:info>* section to add a column.
2. Add the following attributes. Any of the existing fields can serve as an example.

Attribute Name	Attribute Value
<i>name</i>	Set this to a dimension or metric as defined in the API documentation .
<i>xs:type</i>	Set this to the data type.
<i>other:dimension</i>	If you want to define a column for a dimension, set this to "true".
<i>other:metric</i>	If you want to define a column for a metric, set this to "true".

3. To use the new files, set the Location connection property to the folder containing the script files.

Advanced Settings

Fine Tuning Data Access

You can use the following properties to gain greater control over Google Analytics API features and the strategies the adapter uses to surface them:

- DefaultFilter: Set this to apply a filter to all queries. Columns you specify in the WHERE clause override values set in this property. See the table-specific information for the tables you are working with to determine columns that can be used in the WHERE clause.
- SamplingLevel: Instead of returning every record that matches your query, Google samples results based on the size of a time interval. This property provides several easy options for configuring an appropriate sample level.

Connecting Through a Firewall or Proxy

To connect through the Windows system proxy, set only the connection properties needed to authenticate and to connect. To connect to other proxies, set ProxyAutoDetect to false and in addition set the following.

To authenticate to an HTTP proxy, set [ProxyAuthScheme](#), [ProxyUser](#), and [ProxyPassword](#), in addition to [ProxyServer](#) and [ProxyPort](#).

To connect to other proxies, set [FirewallType](#), [FirewallServer](#), and [FirewallPort](#). To tunnel the connection, set [FirewallType](#) to TUNNEL. To authenticate to a SOCKS proxy, set [FirewallType](#) to SOCKS5. Additionally, specify [FirewallUser](#) and [FirewallPassword](#).

Troubleshooting the Connection

To show adapter activity from query execution to HTTP calls, use [Logfile](#) and [Verbosity](#). The examples of common connection errors below show how to use these properties to get more context. Contact the support team for help tracing the source of an error or circumventing a performance issue.

- **Authentication errors:** Typically, recording a [Logfile](#) at [Verbosity](#) 4 is necessary to get full details on an authentication error.
- **Queries time out:** A server that takes too long to respond will exceed the adapter's client-side timeout. Often, setting the [Timeout](#) property to a higher value will avoid a connection error. Another option is to disable the timeout by setting the property to 0. Setting [Verbosity](#) to 2 will show where the time is being spent.

SQL Compliance

SELECT Statements

See [SELECT Statements](#) for a syntax reference and examples.

See [Data Model](#) for information on the capabilities of the Google Analytics API.

EXECUTE Statements

Use EXECUTE or EXEC statements to execute stored procedures. See [EXECUTE Statements](#) for a syntax reference and examples.

Names and Quoting

- Table and column names are considered identifier names; as such, they are restricted to the following characters: [A-Z, a-z, 0-9, _:@].
- To use a table or column name with characters not listed above, the name must be quoted using double quotes ("name") in any SQL statement.
- Strings must be quoted using single quotes (e.g., 'John Doe').

Transactions and Batching

Transactions are not currently supported.

Additionally, the adapter does not support batching of SQL statements. To execute multiple commands, you can create multiple instances and execute each separately.

SELECT Statements

A SELECT statement can consist of the following basic clauses.

- SELECT
- INTO
- FROM
- JOIN
- WHERE
- GROUP BY
- HAVING
- UNION
- ORDER BY
- LIMIT

SELECT Syntax

The following syntax diagram outlines the syntax supported by the Google Analytics adapter:

```

SELECT {
  [ TOP <numeric_literal> ]
  {
    *
    | {
        <expression> [ [ AS ] <column_reference> ]
        | { <table_name> | <correlation_name> } .*
      } [ , ... ]
    }
  [ INTO csv:// [ filename= ] <file_path> [ ;delimiter=tab ] ]
  {
    FROM <table_reference> [ [ AS ] <identifier> ]
  }
  [ WHERE <search_condition> ]
  [
    ORDER BY
    <column_reference> [ ASC | DESC ] [ NULLS FIRST | NULLS LAST ]
  ]
  [
    LIMIT <expression>
  ]
}

<expression> ::=
  | <column_reference>
  | @ <parameter>
  | ?
  | COUNT( * | { [ DISTINCT ] <expression> } )
  | { AVG | MAX | MIN | SUM | COUNT } ( <expression> )
  | NULLIF ( <expression> , <expression> )
  | COALESCE ( <expression> , ... )
  | CASE <expression>
      WHEN { <expression> | <search_condition> } THEN { <expression> |
NULL } [ ... ]
  | ELSE { <expression> | NULL } ]
  | <literal>
  | <sql_function>

<search_condition> ::=
  {
    <expression> { = | > | < | >= | <= | <> | != | LIKE | NOT LIKE |

```

```
AND | OR } [ <expression> ]
} [ { AND | OR } ... ]
```

Examples

1. Return all columns:

```
SELECT * FROM Traffic
```

2. Rename a column:

```
SELECT "DeviceCategory" AS MY_DeviceCategory FROM Traffic
```

3. Cast a column's data as a different data type:

```
SELECT CAST(AnnualRevenue AS VARCHAR) AS Str_AnnualRevenue FROM Traffic
```

4. Search data:

```
SELECT * FROM Traffic WHERE Transactions > '0';
```

5. The Google Analytics APIs support the following operators in the WHERE clause: =, >, <, >=, <=, <>, !=, LIKE, NOT LIKE, AND, OR.

```
SELECT * FROM Traffic WHERE Transactions > '0';
```

6. Sort a result set in ascending order:

```
SELECT Browser, DeviceCategory FROM Traffic ORDER BY DeviceCategory ASC
```

SELECT INTO Statements

You can use the SELECT INTO statement to export formatted data to a file.

Data Export with an SQL Query

The following query exports data into a file formatted in comma-separated values (CSV):

```
boolean ret = stat.execute("SELECT Browser, DeviceCategory INTO
'csv://c:/Traffic.txt' FROM 'Traffic' WHERE Transactions > '0'");
System.out.println(stat.getUpdateCount()+" rows affected");
```

You can specify other file formats in the URI. The following example exports tab-separated values:

```
Statement stat = conn.createStatement();
boolean ret = stat.execute("SELECT * INTO 'Traffic' IN
'csv://filename=c:/Traffic.csv;delimiter=tab' FROM 'Traffic' WHERE
Transactions > '0'");
System.out.println(stat.getUpdateCount()+" rows affected");
```

EXECUTE Statements

To execute stored procedures, you can use EXECUTE or EXEC statements.

EXEC and EXECUTE assign stored procedure inputs, referenced by name, to values or parameter names.

Stored Procedure Syntax

To execute a stored procedure as an SQL statement, use the following syntax:

```
{ EXECUTE | EXEC } <stored_proc_name>
{
  [ @ ] <input_name> = <expression>
} [ , ... ]

<expression> ::=
  | @ <parameter>
  | ?
  | <literal>
```

Example Statements

Reference stored procedure inputs by name:

```
EXECUTE my_proc @second = 2, @first = 1, @third = 3;
```

Execute a parameterized stored procedure statement:

```
EXECUTE my_proc second = @p1, first = @p2, third = @p3;
```

Data Model

The Google Analytics Adapter models Google Analytics entities in relational Tables, Views, and Stored Procedures. The provided tables will give you an overview of your account information and the profiles available for Google Analytics queries. Google Analytics allows for Dimensions and Metrics to be queried in a large number of arrangements. Some sample views are provided based on common Google Analytics reports. You can however also create your own custom views based on any combination of Dimensions and Metrics you need.

API limitations and requirements are documented in this section; you can use the SupportEnhancedSQL feature, set by default, to circumvent most of these limitations.

Create Additional Schemas

The [CreateCustomSchema](#) stored procedure can be used to easily generate new schema files with a custom combination of Dimensions and Metrics. This procedure takes the TableName and comma-separated lists of Dimensions and Metrics and builds a schema file that can be read by the adapter. Each Dimension or Metric in the list takes the name of the value from Google Analytics (without the 'ga:' prefix). For example:

```
Dimensions=UserType,SessionCount
```

```
Metrics=Users,PercentNewSessions
```

If the Location connection property is set, the file will be output to that folder. Otherwise, the OutputFolder input can be used to specify an output folder. To begin querying these

new files, simply set the Location connection property to the folder containing these new schema files.

Tables

[Tables](#) describes the available tables.

Views

[Views](#) are tables that cannot be modified. Typically, data that are read-only and cannot be updated are shown as views.

Stored Procedures

[Stored Procedures](#) are function-like interfaces to the data source. They can be used to search, update, and modify information in the data source.

Tables

The adapter models the data in Google Analytics into a list of tables that can be queried using standard SQL statements.

Generally, querying Google Analytics tables is the same as querying a table in a relational database. Sometimes there are special cases, for example, including a certain column in the WHERE clause might be required to get data for certain columns in the table. This is typically needed for situations where a separate request must be made for each row to get certain columns. These types of situations are clearly documented at the top of the table page linked below.

Google Analytics Adapter Tables

Name	Description
Accounts	Lists all Accounts to which the user has access.

Goals	A Goals resource describes a goal for one of a user's profiles.
Profiles	Lists all Profiles to which the user has access.
Segments	Lists all Segments to which the user has access.
UserActivity	List information on a user's activity.
WebProperties	Lists Web Properties to which the user has access.

Accounts

Lists all Accounts to which the user has access.

Table Specific Information

Select

The Accounts table exposes every account the user has access to. Filters are not available in the WHERE clause for this table but LIMIT is supported.

Columns

Name	Type	ReadOnly	Description
Id [KEY]	String	True	Account Id.
Kind	String	True	Resource type for Analytics account.

SelfLink	<i>String</i>	True	Link for this account.
Name	<i>String</i>	True	Account name.
Permissions	<i>String</i>	True	All the permissions that the user has for this account. These include any implied permissions.
Created	<i>Datetime</i>	True	Time the account was created.
Updated	<i>Datetime</i>	True	Time the account was last modified.
ChildLink	<i>String</i>	True	Child link for an account entry. Points to the list of Web properties for this account.

Goals

A Goals resource describes a goal for one of a user's profiles.

Columns

Name	Type	ReadOnly	Description
Id [KEY]	<i>String</i>	True	Goal Id.

WebPropertyId [KEY]	<i>String</i>	True	Web property ID to which this goal belongs. The web property ID is of the form UA-XXXXX-YY.
Kind	<i>String</i>	True	Resource type for Analytics profile.
SelfLink	<i>String</i>	True	Link for this goal.
AccountId	<i>String</i>	True	Account ID to which this goal belongs.
InternalWebPropertyId	<i>String</i>	True	Internal ID for the web property to which this goal belongs.
ProfileId	<i>String</i>	True	View (Profile) ID to which this goal belongs.
Name	<i>String</i>	True	Goal name.
Active	<i>Boolean</i>	True	Determines whether this goal is active.
Value	<i>Double</i>	True	Goal value.
Type	<i>String</i>	True	Goal type. Possible values are URL_DESTINATION, VISIT_TIME_ON_SITE, VISIT_NUM_PAGES, and EVENT.

Created	<i>Datetime</i>	True	Time this goal was created.
Updated	<i>Datetime</i>	True	Time this goal was last modified.
ParentLink	<i>String</i>	True	Parent link for a goal. Points to the view (profile) to which this goal belongs.
UrlDestinationDetails	<i>String</i>	True	Details for the goal of the type URL_DESTINATION.
VisitTimeOnSiteDetails	<i>String</i>	True	Details for the goal of the type VISIT_TIME_ON_SITE.
VisitNumPagesDetails	<i>String</i>	True	Value used for this comparison.
EventDetails	<i>String</i>	True	Details for the goal of the type EVENT.

Profiles

Lists all Profiles to which the user has access.

Table Specific Information

Select

The Profiles table exposes all profiles that the user has access to. The AccountId and WebPropertyId fields are available for filtering in the WHERE clause with = operator. For example:

```
SELECT * FROM Profiles WHERE AccountId='123456'
```

Columns

Name	Type	ReadOnly	Description
Id [KEY]	String	True	Profile Id.
Kind	String	True	Resource type for Analytics profile.
SelfLink	String	True	Link for this profile.
AccountId	String	True	Account Id to which this profile belongs.
WebPropertyId	String	True	Web property Id of the form UA-XXXXX-YY to which this profile belongs.
InternalWebPropertyId	String	True	Internal Id for the Web property to which this profile belongs.

Name	<i>String</i>	True	Name of this profile.
Currency	<i>String</i>	True	The currency type associated with this profile.
Timezone	<i>String</i>	True	Time zone for which this profile has been configured.
WebsiteURL	<i>String</i>	True	Website URL for this profile.
DefaultPage	<i>String</i>	True	Default page for this profile.
ExcludeQueryParameters	<i>String</i>	True	The query parameters that are excluded from this profile.
SiteSearchQueryParameters	<i>String</i>	True	The site search query parameters for this profile.
SiteSearchCategoryParameters	<i>String</i>	True	Site search category parameters for this profile.
Type	<i>String</i>	True	Profile type.
Permissions	<i>String</i>	True	All the permissions that the user has for this profile. These include any implied permissions.

Created	<i>Datetime</i>	True	Time this profile was created.
Updated	<i>Datetime</i>	True	Time this profile was last modified.
eCommerceTracking	<i>Boolean</i>	True	Indicates whether e-commerce tracking is enabled for this profile.
ParentLink	<i>String</i>	True	Parent link for this profile. Points to the Web property to which this profile belongs.
ChildLink	<i>String</i>	True	Child link for this profile. Points to the list of goals for this profile.

Segments

Lists all Segments to which the user has access.

Table Specific Information

Select

The Segments table exposes all segments that the user has access to. Filters are not available in the WHERE clause for this table but LIMIT is supported.

Columns

Name	Type	ReadOnly	Description
Id [KEY]	<i>String</i>	True	Segment Id.
Kind	<i>String</i>	True	Resource type for Analytics segment.
SelfLink	<i>String</i>	True	Link for this segment.
SegmentID	<i>String</i>	True	Segment Id. Can be used with the segment parameter in Data Feed.
Name	<i>String</i>	True	Segment name.
Definition	<i>String</i>	True	Segment definition.
Type	<i>String</i>	True	Type for a segment. Possible values are BUILT_IN or CUSTOM.
Created	<i>Datetime</i>	True	Time the segment was created.
Updated	<i>Datetime</i>	True	Time the segment was last modified.

UserActivity

List information on a user's activity.

Table Specific Information

Select

This view requires column 'ClientID' to be specified in order to execute a query. Unfortunately, we don't expose a 'Clients' or 'Users' table (or equivalent) to display client IDs. **This is an API limitation.**

Because of this, the only way to retrieve a ClientID is by following the below steps:

1. Login to Google Analytics in your preferred browser.
2. Expand the 'Audience' report on the left side of the screen.
3. Choose 'User Explorer' option.

Client IDs will be displayed under column 'Client Id'. Use one of those values when building the query in the adapter, e.g.:

```
SELECT * FROM UserActivity WHERE ClientId = '194067010.1581918826'
```

Columns

Name	Type	ReadOnly	Description
ClientId	<i>String</i>	True	The Client ID or User ID associated with the user. This can be found in the 'User Explorer' section of Google Analytics' UI.
ActivityTime	<i>String</i>	True	Timestamp of the activity.

Source	<i>String</i>	True	The source of referrals. For manual campaign tracking, it is the value of the <code>utm_source</code> campaign tracking parameter. For AdWords autotagging, it is <code>google</code> . If you use neither, it is the domain of the source (e.g., <code>document.referrer</code>) referring the users. It may also contain a port address. If users arrived without a referrer, its value is <code>(direct)</code> .
Medium	<i>String</i>	True	The type of referrals. For manual campaign tracking, it is the value of the <code>utm_medium</code> campaign tracking parameter. For AdWords autotagging, it is <code>cpc</code> . If users came from a search engine detected by Google Analytics, it is <code>organic</code> . If the referrer is not a search engine, it is <code>referral</code> . If users came directly to the property and <code>document.referrer</code> is empty, its value is <code>(none)</code> .
ChannelGrouping	<i>String</i>	True	The Channel Group associated with an end user's session for this View (defined by the View's Channel Groupings).
Campaign	<i>String</i>	True	For manual campaign tracking, it is the value of the <code>utm_campaign</code> campaign tracking parameter. For AdWords autotagging, it is the name(s) of the online ad campaign(s) you use for the property. If you use neither, its value is <code>(not set)</code> .
Keyword	<i>String</i>	True	For manual campaign tracking, it is the value of the <code>utm_term</code> campaign tracking parameter. For AdWords traffic, it contains the best matching targeting criteria. For the display network, where

			multiple targeting criteria could have caused the ad to show up, it returns the best matching targeting criteria as selected by Ads. This could be display_keyword, site placement, boomuserlist, user_interest, age, or gender. Otherwise its value is (not set).
Hostname	<i>String</i>	True	The hostname from which the tracking request was made.
LandingPagePath	<i>String</i>	True	The first page in users' sessions, or the landing page.
ActivityType	<i>String</i>	True	Type of this activity.
Event	<i>String</i>	True	This field contains all the details pertaining to an event and will be set if activityType equals EVENT.
PageView	<i>String</i>	True	This will be set if activityType equals PAGEVIEW. This field contains all the details about the visitor and the page that was visited.
AppView	<i>String</i>	True	This will be set if activityType equals SCREEN_VIEW.
Ecommerce	<i>String</i>	True	This will be set if activityType equals ECOMMERCE.
Goals	<i>String</i>	True	This will be set if activityType equals GOAL.

StartDate	<i>String</i>	True	Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	True	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
SamplesReadCounts	<i>String</i>	True	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	True	Comma separated list of samples space sizes counts when the response data is sampled.

WebProperties

Lists Web Properties to which the user has access.

Table Specific Information

Select

The Web Properties table exposes all web properties that the user has access to. The AccountId field is available for filtering in the WHERE clause with = operator. For example:

```
SELECT * FROM WebProperties WHERE AccountId='123456'
```

Columns

Name	Type	ReadOnly	Description
------	------	----------	-------------

Id [KEY]	<i>String</i>	True	Web property Id.
Kind	<i>String</i>	True	Resource type for Analytics web property.
SelfLink	<i>String</i>	True	Link for this web property.
AccountId	<i>String</i>	True	Account Id to which this web property belongs.
InternalWebPropertyId	<i>String</i>	True	Internal Id for the web property.
DefaultProfileId	<i>String</i>	True	Default view (profile) Id.
IndustryVertical	<i>String</i>	True	
Level	<i>String</i>	True	Level for this web property.
Name	<i>String</i>	True	Name of this web property.
ProfileCount	<i>Integer</i>	True	View (Profile) count for this web property.

WebsiteURL	<i>String</i>	True	Website URL for this web property.
Permissions	<i>String</i>	True	All the permissions that the user has for this web property. These include any implied permissions.
Created	<i>Datetime</i>	True	Time this web property was created.
Updated	<i>Datetime</i>	True	Time this web property was last modified.
ParentLink	<i>String</i>	True	Parent link for this profile. Points to the Account to which this profile belongs.
ChildLink	<i>String</i>	True	Child link for this web property. Points to the list of views (profiles) for this web property.

Views

Views are composed of columns and pseudo columns. Views are similar to tables in the way that data is represented; however, views do not support updates. Entities that are represented as views are typically read-only entities. Often, a stored procedure is available to update the data if such functionality is applicable to the data source.

Queries can be executed against a view as if it were a normal table, and the data that comes back is similar in that regard. To find out more about tables and stored procedures, please navigate to their corresponding entries in this help document.

Google Analytics Adapter Views

Name	Description
AdSense	Retrieves AdSense data.
AdWords	Retrieves AdWords data.
Ecommerce	Retrieves Ecommerce data.
Events	Retrieves Event data.
GoalCompletions	Retrieves Goal Completion data.
SiteContent	Retrieves internal Site Content data.
SiteSearch	Retrieves internal Site Search data.
SiteSpeed	Retrieves internal Site Speed data.
Traffic	Retrieves all Traffic data.

AdSense

Retrieves AdSense data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses Date instead of the default Campaign dimension:

```
SELECT Date, Sessions, Users, OrganicSearches, GoalValueAll,
TransactionRevenue, AdSenseRevenue, AdSenseAdsClicks,
AdSensePageImpressions FROM AdSense
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return the Campaign name and revenue for Campaigns with revenue of more than 100:

```
SELECT Campaign, AdSenseRevenue FROM AdSense WHERE AdSenseRevenue > 100
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM AdSense WHERE StartDate='90daysAgo' AND EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM AdSense
SELECT Campaign, Sessions, Users, OrganicSearches, GoalValueAll,
TransactionRevenue, AdSenseRevenue, AdSenseAdsClicks,
AdSensePageImpressions FROM AdSense
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	Date	True			The date of the session formatted as YYYYMMDD.

Year	<i>Integer</i>	True	The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True	The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the

					account. This value is also corrected for daylight savings time.
Campaign	<i>String</i>	True		True	When using manual campaign tracking, this value is the value of the utm_campaign campaign tracking parameter. When using AdWords autotagging, this value is the name(s) of the online ad campaign that you use for your property. Otherwise, this value is the following: not set.
Sessions	<i>Integer</i>	False	True		Counts the

				total number of sessions.
Users	<i>Integer</i>	False	True	Total number of users to your property for the requested time period.
OrganicSearches	<i>Integer</i>	False	True	The number of organic searches that happened within a session. This metric is search-engine agnostic.
GoalValueAll	<i>Double</i>	False	True	The total numeric value for all goals defined for your profile.
TransactionRevenue	<i>Decimal</i>	False	True	The total sale revenue provided in the

				transaction, excluding shipping and tax.
AdSenseRevenue	Decimal	False	True	The total revenue from AdSense ads.
AdSenseAdClicks	Integer	False	True	The number of times AdSense ads on your site were clicked.
AdSensePageImpressions	Integer	False	True	The number of page views during which an AdSense ad was displayed. A page impression can have multiple ad units.
StartDate	String			Start date for fetching Analytics data. Either a date

		string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-

		separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the

		V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description

Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

AdWords

Retrieves AdWords data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses Keyword instead of the default Campaign dimension:

```
SELECT Keyword, Sessions, Impressions, AdClicks, AdCost, CTR, CPC, RPC,
ROI, Margin FROM AdWords
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will find the total number of AdClicks from the United States:

```
SELECT Country, AdClicks FROM AdWords WHERE Country='United States'
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM AdWords WHERE StartDate='90daysAgo' AND EndDate='Today'
```

Because there are more than 10 Metrics available for the AdWords table, a query that

selects all columns only returns the default Metrics for this table (see columns marked as default Metrics below). If you need to select other Metrics, select them explicitly instead of using '*'. The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM AdWords
SELECT Keyword, Sessions, Impressions, AdClicks, AdCost, CTR, CPC, RPC,
ROI, Margin FROM AdWords
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True			The month of the session. An integer from 01 to

			12.
Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
Language	<i>String</i>	True	The language provided by the HTTP

			Request for the browser. Values are given as an ISO-639 code.
Country	<i>String</i>	True	The country of users, derived from IP addresses.
City	<i>String</i>	True	The cities of property users, derived from IP addresses.
Browser	<i>String</i>	True	The names of browsers used by users to your website. For example, Internet Explorer or Firefox.
OperatingSystem	<i>String</i>	True	The operating system used by your users.

					For example, Windows, Linux , Macintosh, iPhone, iPod.
DeviceCategory	<i>String</i>	True			The type of device: desktop, tablet, or mobile.
Campaign	<i>String</i>	True	True		When using manual campaign tracking, this value is the value of the utm_campaign campaign tracking parameter. When using AdWords autotagging, this value is the name (s) of the online ad campaign that you use for your

			property. Otherwise, this value is: not set.
AdGroup	<i>String</i>	True	The name of your AdWords ad group.
Keyword	<i>String</i>	True	When using manual campaign tracking, this value is the value of the utm_ term campaign tracking parameter; i.e., the keywords used by users to reach your property when using AdWords autotaggin g or if a user used organic search to reach your property. Otherwise

				this value is: not set.
Sessions	<i>Integer</i>	False	True	Counts the total number of sessions.
Impressions	<i>Integer</i>	False	True	Total number of campaign impressions.
AdClicks	<i>Integer</i>	False	True	The total number of times users have clicked on an ad to reach your property.
AdCost	<i>Decimal</i>	False	True	Derived cost for the advertising campaign. The currency for this value is based on the currency that you set in your AdWords account.

CTR	<i>Double</i>	False	True	Click-through rate for your ad. This is equal to the number of clicks divided by the number of impressions for your ad (e.g., how many times users clicked on one of your ads where that ad appeared).
CPC	<i>Decimal</i>	False	True	Cost to advertiser per click.
RPC	<i>Decimal</i>	False	True	RPC, or revenue-per-click, is the average revenue from e-commerce sales and/or

					goal value you received for each click on one of your search ads.
ROI	<i>Decimal</i>	False	True		Returns on Investment is overall transaction profit divided by derived advertising cost.
Margin	<i>Decimal</i>	False	True		The overall transaction profit margin.
PercentNewSessions	<i>Double</i>	False			The percentage of sessions by people who had never visited your property before.
NewUsers	<i>Integer</i>	False			The number of users whose visit

			to your property was marked as a first-time session.
BounceRate	Double	False	The percentage of single-page session.
PageviewsPerSession	Double	False	The average number of pages viewed during a session on your property.
AvgSessionDuration	Double	False	The average duration of user sessions represented in total seconds.
GoalConversionRateAll	Double	False	The percentage of sessions that resulted in a conversion to at least

			one of your goals.
Transactions	<i>Integer</i>	False	The total number of transactions.
RevenuePerTransaction	<i>Decimal</i>	False	The average revenue for an e-commerce transaction.
TransactionRevenue	<i>Decimal</i>	False	The total sale revenue provided in the transaction, excluding shipping and tax.
TransactionRevenuePerSession	<i>Decimal</i>	False	Average transaction revenue for a session on your property.
StartDate	<i>String</i>		Start date for fetching

		Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the

		schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-

		separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

Ecommerce

Retrieves Ecommerce data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses ProductSku instead of the default Date dimension:

```
SELECT ProductSku, UniquePurchases, ItemQuantity FROM Ecommerce
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. The following query will find all product SKUs with more than 100 unique purchases:

```
SELECT ProductSku, UniquePurchases FROM Ecommerce WHERE UniquePurchases > 100
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM Ecommerce WHERE StartDate='90daysAgo' AND EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM Ecommerce
SELECT Date, Sessions, Users, Transactions, TransactionRevenue,
TransactionShipping, TransactionTax, RevenuePerTransaction FROM
Ecommerce
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.

Month	<i>Integer</i>	True	The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
Country	<i>String</i>	True	The country of users,

			derived from IP addresses.
City	<i>String</i>	True	The cities of property users, derived from IP addresses.
ProductName	<i>String</i>	True	The product name for purchased items, as supplied by your e-commerce tracking application.
ProductSku	<i>String</i>	True	The product SKUs for purchased items, as you have defined them in your e-commerce tracking application.
ProductCategory	<i>String</i>	True	Any product variations

				(e.g., size or color) for purchased items, as supplied by your e-commerce application.
TransactionId	<i>String</i>	True		The transaction ID for the shopping cart purchase.
Sessions	<i>Integer</i>	False	True	Counts the total number of sessions.
Users	<i>Integer</i>	False	True	Total number of users to your property for the requested time period.
Transactions	<i>Integer</i>	False	True	The total number of transactions.
TransactionRevenue	<i>Decimal</i>	False	True	The total sale revenue

					provided in the transaction, excluding shipping and tax.
TransactionShipping	<i>Decimal</i>	False	True		The total cost of shipping.
TransactionTax	<i>Decimal</i>	False	True		The total amount of tax.
RevenuePerTransaction	<i>Decimal</i>	False	True		The average revenue for an e-commerce transaction.
UniquePurchases	<i>Integer</i>	False	True		The number of product sets purchased.
ItemQuantity	<i>Integer</i>	False	True		The total number of items purchased.
ItemRevenue	<i>Decimal</i>	False	True		The total revenue from purchased product items on

		your property.
StartDate	<i>String</i>	Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema.

		Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of

		cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

Events

Retrieves Event data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses EventLabel instead of the default EventCategory dimension:

```
SELECT EventLabel, TotalEvents, UniqueEvents, EventValue,
SessionsWithEvent, AvgEventValue, EventsPerSessionWithEvent FROM Events
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return all Events with less than or equal to 200 total events:

```
SELECT EventLabel, TotalEvents FROM Events WHERE TotalEvents <= 200
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM Events WHERE StartDate='39daysAgo' AND EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM Events
SELECT EventCategory, TotalEvents, UniqueEvents, EventValue,
SessionsWithEvent, AvgEventValue, EventsPerSessionWithEvent FROM Events
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True			The month of the session. A two digit integer

				from 01 to 12.
Week	<i>Integer</i>	True		The week of the session. A two-digit number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True		The day of the month. A two-digit number from 01 to 31.
Hour	<i>Integer</i>	True		A two-digit hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
EventCategory	<i>String</i>	True	True	The

				category of the event.
EventAction	<i>String</i>	True		The action of the event.
EventLabel	<i>String</i>	True		The label of the event.
TotalEvents	<i>Integer</i>	False	True	The total number of events for the profile, across all categories.
UniqueEvents	<i>Integer</i>	False	True	The total number of unique events for the profile, across all categories.
EventValue	<i>Long</i>	False	True	The total value of events for the profile.
SessionsWithEvent	<i>Integer</i>	False	True	The total number of sessions with events.

AvgEventValue	Double	False	True	The average value of an event.
EventsPerSessionWithEvent	Double	False	True	The average number of events per session with event.
StartDate	String			Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	String			End date for fetching Analytics data. Either a date string or a relative date (e.g., today,

		yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A

		comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response

		data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

GoalCompletions

Retrieves Goal Completion data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses Date instead of the default GoalCompletionLocation dimension:

```
SELECT Date, GoalStartsAll, GoalCompletionsAll, GoalValueAll,
GoalValuePerSession, GoalConversionRateAll, GoalAbandonsAll,
GoalAbandonRateAll FROM GoalCompletions
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will find Goal Completions for a specific Goal Completion Location:

```
SELECT GoalCompletionLocation, GoalCompletionsAll FROM GoalCompletions
WHERE GoalCompletionLocation = '/mypath'
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM GoalCompletion WHERE StartDate='90daysAgo' AND
EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM GoalCompletions
SELECT GoalCompletionLocation, GoalStartsAll, GoalCompletionsAll,
GoalValueAll, GoalValuePerSession, GoalConversionRateAll,
GoalAbandonsAll, GoalAbandonRateAll FROM GoalCompletions
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True			The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True			The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True			The day of the month. A number from 01 to

					31.
Hour	Integer	True			An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
GoalCompletionLocationString		True		True	The page path or screen name that matched any destination-type goal completion.
GoalStartsAll	Integer	False	True		The total number of starts for all goals defined for your profile.
GoalCompletionsAll	Integer	False	True		The total number of completion

					s for all goals defined for your profile.
GoalValueAll	<i>Double</i>	False	True		The total numeric value for all goals defined for your profile.
GoalValuePerSession	<i>Double</i>	False	True		The average goal value of a session on your property.
GoalConversionRateAll	<i>Double</i>	False	True		The percentage of sessions that resulted in a conversion to at least one of your goals.
GoalAbandonsAll	<i>Integer</i>	False	True		The overall number of times users started goals without actually

				completing them.
GoalAbandonRateAll	Double	False	True	The rate at which goals were abandoned.
StartDate	String			Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	String			End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	String			A comma-separated list of dimensions

		to retrieve in addition to the columns defined in the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE

CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response

data is
sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

SiteContent

Retrieves internal Site Content data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses PageTitle instead of the default PagePath dimension:

```
SELECT PageTitle, PageViews, UniquePageviews, AvgTimeOnPage, Entrances,
BounceRate, EntranceRate, Exits, PageValue, TimeOnPage FROM SiteContent
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return the Page Paths in order of most Entrances to least:

```
SELECT PagePath, Entrances FROM SiteContent ORDER BY Entrances DESC
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM SiteContent WHERE StartDate='90daysAgo' AND
EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM SiteContent
SELECT PagePath, PageViews, UniquePageviews, AvgTimeOnPage, Entrances,
BounceRate, EntranceRate, Exits, PageValue, TimeOnPage FROM SiteContent
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from

			2005 to the current year.
Month	<i>Integer</i>	True	The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
Country	<i>String</i>	True	The country of users, derived from IP addresses.
City	<i>String</i>	True	The cities of property users, derived from IP addresses.

Browser	<i>String</i>	True			The names of browsers used by users to your website. For example, Internet Explorer or Firefox.
PagePath	<i>String</i>	True		True	A page on your website specified by path and/or query parameters. Use in conjunction with host name to get the full URL of the page.
PageTitle	<i>String</i>	True			The title of a page. Keep in mind that multiple pages might have the same PageTitle.
PageViews	<i>Integer</i>	False	True		The total number of page views for your property.
UniquePageviews	<i>Integer</i>	False	True		The number of different (unique) pages within a session. This takes into both the PagePath and PageTitle to determine uniqueness.

AvgTimeOnPage	<i>Double</i>	False	True	The average amount of time users spent viewing this page or a set of pages.
Entrances	<i>Integer</i>	False	True	The number of entrances to your property, measured as the first page view in a session. Typically used with LandingPagePath.
BounceRate	<i>Double</i>	False	True	The percentage of single-page sessions.
EntranceRate	<i>Double</i>	False	True	The percentage of page views in which this page was the entrance.
Exits	<i>Integer</i>	False	True	The number of exits from your property.
PageValue	<i>Double</i>	False	True	The average value of this page or set of pages. Page Value is the sum of TransactionRevenue and

				GoalValueAll, columns in the Ecommerce table, divided by UniquePageviews (for the page or set of pages).
TimeOnPage	Double	False	True	How long a user spent on a particular page in seconds. Calculated by subtracting the initial view time for a particular page from the initial view time for a subsequent page. Thus, this metric does not apply to exit pages for your property.
ExitRate	Double	False	True	The percentage of exits from your property that occurred out of the total page views.
StartDate	String			Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or

		#daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE

CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

SiteSearch

Retrieves internal Site Search data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses SearchStartPage instead of the default SearchKeyword dimension:

```
SELECT SearchStartPage, SearchSessions, PercentSessionsWithSearch,
SearchUniques, SearchResultViews, AvgSearchResultViews, SearchExits,
PercentSearchRefinements, SearchDuration, AvgSearchDuration,
AvgSearchDepth FROM SiteSearch
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return the number of sessions for a 'software' Search Category:

```
SELECT SearchCategory, SearchSessions FROM SiteSearch WHERE
SearchCategory='software'
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the `StartDate` and `EndDate` inputs are left unset. To override

this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM SiteSearch WHERE StartDate='90daysAgo' AND EndDate='Today'
```

Because there are more than 10 Metrics available for the SiteSearch table, a query that selects all columns only returns the default Metrics for this table (see columns marked as default Metrics below). If you need to select other Metrics, select them explicitly instead of using '*'. The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or set in the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM SiteSearch
SELECT SearchKeyword, SearchSessions, PercentSessionsWithSearch,
SearchUniques, SearchResultViews, AvgSearchResultViews, SearchExits,
PercentSearchRefinements, SearchDuration, AvgSearchDuration,
AvgSearchDepth FROM SiteSearch
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current

			year.
Month	<i>Integer</i>	True	The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings

				time.
SearchKeyword	<i>String</i>	True	True	Search terms used by users within your property.
SearchCategory	<i>String</i>	True		The categories used for the internal search if you have this enabled for your profile. For example, product categories, such as electronics, furniture, or clothing.
SearchStartPage	<i>String</i>	True		A page where the user initiated an internal search on your property.
SearchSessions	<i>Integer</i>	False	True	The total

				number of sessions that included an internal search.
PercentSessionsWithSearch	Double	False	True	The percentage of sessions with search.
SearchUniques	Integer	False	True	The total number of unique keywords from internal searches within a session.
SearchResultViews	Integer	False	True	The number of times a search result page was viewed after performing a search.
AvgSearchResultViews	Double	False	True	The average number of times people

				viewed a search results page after performing a search.
SearchExits	<i>Integer</i>	False	True	The number of exits on your site that occurred following a search result from your internal search feature.
SearchExitRate	<i>Double</i>	False		The percentage of searches that resulted in an immediate exit from your property.
SearchRefinements	<i>Integer</i>	False		The total number of times a refinement (transition) occurs between

				internal search keywords within a session.
PercentSearchRefinements	Double	False	True	The percentage of number of times a refinement (i.e., transition) occurs between internal search keywords within a session.
SearchDuration	Double	False	True	The session duration on your property where a use of your internal search feature occurred.
AvgSearchDuration	Double	False		The average amount of time people

				spent on your property after searching.
SearchDepth	<i>Integer</i>	False		The average number of subsequent page views made on your property after a use of your internal search feature.
AvgSearchDepth	<i>Double</i>	False	True	The average number of pages people viewed after performing a search on your property.
StartDate	<i>String</i>			Start date for fetching Analytics data. Either a date string

		or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema. Set to empty string to

		retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start

		dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

SiteSpeed

Retrieves internal Site Speed data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses PagePath instead of the default Browser dimension:

```
SELECT PagePath, AvgPageLoadTime, AvgRedirectionTime,
AvgDomainLookupTime, AvgServerConnectionTime, AvgServerResponseTime,
AvgPageDownloadTime FROM SiteSpeed
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return Page Title for all pages with an average load time of more than 1.5 on mobile devices:

```
SELECT DeviceCategory, PageTitle, AvgPageLoadTime FROM SiteSpeed WHERE
AvgPageLoadTime > 1.5 AND DeviceCategory='mobile'
```

All reports in Google Analytics must cover a specific date range. The default behavior is to

pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM SiteSpeed WHERE StartDate='90daysAgo' AND EndDate='Today'
```

Because there are more than 10 Metrics available for the SiteSpeed table, a query that selects all columns only returns the default Metrics for this table (see columns marked as default Metrics below). If you need to select other Metrics, select them explicitly instead of using '*'. The default dimension for the table will be used unless another dimension is specified in the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM SiteSpeed
SELECT Browser, AvgPageLoadTime, AvgRedirectionTime,
AvgDomainLookupTime, AvgServerConnectionTime, AvgServerResponseTime,
AvgPageDownloadTime FROM SiteSpeed
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True			The month of the session. An integer from 01 to 12.
Week	<i>Integer</i>	True			The week of the session. A number

					from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True			The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True			An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
Country	<i>String</i>	True			The country of users, derived from IP addresses.
City	<i>String</i>	True			The cities of property users, derived from IP addresses.
Browser	<i>String</i>	True		True	The names of browsers used by users to your website. For example, Internet Explorer or Firefox.
DeviceCategory	<i>String</i>	True			The type of device: desktop, tablet, or mobile.
PagePath	<i>String</i>	True			A page on your website specified by path and/or query

				parameters. Use in conjunction with host name to get the full URL of the page.
PageTitle	String	True		The title of a page. Keep in mind that multiple pages might have the same PageTitle.
AvgPageLoadTime	Double	False	True	The average amount of time in seconds it takes for pages from the sample set to load, from initiation of the page view (e.g., a click on a page link) to load completion in the browser.
AvgRedirectionTime	Double	False	True	The average amount of time in seconds spent in redirects before fetching this page. If there are no redirects, the value for this metric is expected to be 0.
AvgDomainLookupTime	Double	False	True	The average amount of time in seconds spent in DNS lookup for this page.
AvgServerConnectionTime	Double	False	True	The average amount of time in seconds spent in establishing

				the TCP connection for this page.
AvgServerResponseTime	Double	False	True	The average amount of time in seconds your server takes to respond to a user request, including the network time from the location of the user to your server.
AvgPageDownloadTime	Double	False	True	The average amount of time in seconds to download this page.
PageLoadTime	Integer	False		The amount of time (in milliseconds) it takes for pages from the sample set to load from initiation of the page view (e.g., a click on a page link) to load completion in the browser.
PageLoadSample	Integer	False		The sample set, or count of page views used to calculate the average page load time.
DomainLookupTime	Integer	False		The total amount of time (in milliseconds) spent in DNS lookup for this page among all

			samples.
PageDownloadTime	<i>Integer</i>	False	The total amount of time (in milliseconds) to download this page among all samples.
RedirectionTime	<i>Integer</i>	False	The total amount of time (in milliseconds) spent in redirects before fetching this page among all samples. If there are no redirects, the value for this metric is expected to be 0.
ServerConnectionTime	<i>Integer</i>	False	The total amount of time (in milliseconds) spent in establishing the TCP connection for this page among all samples.
ServerResponseTime	<i>Integer</i>	False	The total amount of time (in milliseconds) your server takes to respond to a user request among all samples, including the network time from the location of the user to your server.
SpeedMetricsSample	<i>Integer</i>	False	The sample set, or

	<i>er</i>		count, of page views used to calculate the averages for site speed metrics. This metric is used in all site speed average calculations.
DomInteractiveTime	<i>Integer</i>	False	The time the browser takes (in milliseconds) to parse the document (DOMInteractive), including the network time from the location of the user to your server. At this time, the user can interact with the Document Object Model even though it is not fully loaded.
DomContentLoadedTime	<i>Integer</i>	False	The time the browser takes (in milliseconds) to parse the document and execute deferred and parser-inserted scripts (DOMContentLoaded), including the network time from the location of the user to your server. Parsing of the document is finished and the

			Document Object Model is ready, but referenced style sheets, images, and subframes may not be finished loading. This event is often the starting point for JavaScript framework execution; e.g., JQuery's onready() callback.
DomLatencyMetricsSampleRate	Integer	False	The sample set, or count, of page views used to calculate the averages for site speed DOM metrics. This metric is used in the AvgDomContentLoadedTime and AvgDomInteractiveTime calculations.
AvgDomInteractiveTimeDouble	Double	False	The average time in seconds, including the network time from the location of the user to your server, that it takes the browser to parse the document and execute deferred and parser-inserted scripts.
AvgDomContentLoadedTimeDouble	Double	False	The average time in seconds it takes the

		browser to parse the document.
StartDate	<i>String</i>	Start date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types.

		The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.

Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.
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Traffic

Retrieves all Traffic data.

Table Specific Information

Select

Google Analytics only allows up to 10 Metrics and 7 Dimensions in a single query. Therefore, when issuing a query that selects all columns, only the default Metric columns will be selected for tables with more than 10 Metrics. The default Dimensions will be used unless you explicitly select other dimension columns. The following query uses Date instead of the default Source and Medium dimensions:

```
SELECT Date, Sessions, PercentNewSessions, NewUsers, BounceRate,
PageviewsPerSession, AvgSessionDuration, GoalConversionRateAll,
Transactions, RevenuePerTransaction, TransactionRevenue FROM Traffic
```

Filters can also be used in the WHERE clause. Dimension fields support the =, !=, LIKE, and NOT LIKE operators. Metric fields support =, !=, >, >=, <, and <= operators. This query will return the number of Sessions using Google Chrome:

```
SELECT Browser, Sessions FROM Traffic WHERE Browser LIKE '%Chrome%'
```

All reports in Google Analytics must cover a specific date range. The default behavior is to pull the last month of data if the StartDate and EndDate inputs are left unset. To override this behavior, the values can be set directly in the query. For example:

```
SELECT * FROM Traffic WHERE StartDate='90daysAgo' AND EndDate='Today'
```

The default dimension for the table will be used unless another dimension is specified in

the select columns, the [DefaultFilter](#), or the Dimensions column in the WHERE clause. See the note on [Establishing a Connection](#) for a limitation with some tools. The following queries return the same results:

```
SELECT * FROM Traffic
SELECT Source, Medium, Sessions, PercentNewSessions, NewUsers,
BounceRate, PageviewsPerSession, AvgSessionDuration,
GoalConversionRateAll, Transactions, TransactionRevenue FROM Traffic
```

Columns

Name	Type	Dimension	DefaultMetric	DefaultDimension	Description
Date	<i>Date</i>	True			The date of the session formatted as YYYYMMDD.
Year	<i>Integer</i>	True			The year of the session. A four-digit year from 2005 to the current year.
Month	<i>Integer</i>	True			The month of the session. An integer from 01 to 12.

Week	<i>Integer</i>	True	The week of the session. A number from 01 to 53. Each week starts on Sunday.
Day	<i>Integer</i>	True	The day of the month. A number from 01 to 31.
Hour	<i>Integer</i>	True	An hour of the day ranging from 00-23 in the timezone configured for the account. This value is also corrected for daylight savings time.
Language	<i>String</i>	True	The language provided by the HTTP Request for the

			browser. Values are given as an ISO-639 code.
Country	<i>String</i>	True	The country of users, derived from IP addresses.
City	<i>String</i>	True	The cities of property users, derived from IP addresses.
Browser	<i>String</i>	True	The names of browsers used by users to your website. For example, Internet Explorer or Firefox.
OperatingSystem	<i>String</i>	True	The operating system used by your users. For example,

				Windows, Linux , Macintosh, iPhone, iPod.
DeviceCategory	<i>String</i>	True		The type of device: desktop, tablet, or mobile.
ChannelGrouping	<i>String</i>	True		The channel grouping the data is returned for.
Source	<i>String</i>	True	True	The source of referrals to your property
Medium	<i>String</i>	True	True	The type of referrals to your property.
UserType	<i>String</i>	True		A boolean indicating if a user is new or returning.
LandingPagePath	<i>String</i>	True		The first page in a user session or landing

			page.
Campaign	<i>String</i>	True	When using manual campaign tracking, this value is the value of the utm_campaign campaign tracking parameter. When using AdWords autotagging, this value is the name (s) of the online ad campaign that you use for your property. Otherwise, this value is: not set.
SocialNetwork	<i>String</i>	True	Name of the social network. This can be related to the referring

				social network for traffic sources or to the social network for social data hub activities.
Sessions	<i>Integer</i>	False	True	Counts the total number of sessions.
Users	<i>Integer</i>	False	True	Total number of users to your property for the requested time period.
PercentNewSessions	<i>Double</i>	False	True	The percentage of sessions by people who had never visited your property before.
NewUsers	<i>Integer</i>	False	True	The number of users

				whose visit to your property was marked as a first-time session.
BounceRate	Double	False	True	The percentage of single-page session.
PageviewsPerSession	Double	False	True	The average number of pages viewed during a session on your property.
AvgSessionDuration	Double	False	True	The average duration of user sessions represented in total seconds.
GoalConversionRateAll	Double	False	True	The percentage of sessions that resulted in a conversion

				to at least one of your goals.
Transactions	<i>Integer</i>	False	True	The total number of transactions.
RevenuePerTransaction	<i>Decimal</i>	False		The average revenue for an e-commerce transaction.
TransactionRevenue	<i>Decimal</i>	False	True	The total sale revenue provided in the transaction, excluding shipping and tax.
TransactionRevenuePerSession	<i>Decimal</i>	False		Average transaction revenue for a session on your property.
StartDate	<i>String</i>			Start date for

		fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
EndDate	<i>String</i>	End date for fetching Analytics data. Either a date string or a relative date (e.g., today, yesterday, or #daysAgo).
Dimensions	<i>String</i>	A comma-separated list of dimensions to retrieve in addition to the columns defined in

		the schema. Set to empty string to retrieve no dimensions.
Metrics	<i>String</i>	A comma-separated list of metrics to retrieve in addition to the columns defined in the schema.
CohortTypes	<i>String</i>	Available only when using the V4 API. A comma-separated list of cohort types. The default value is FIRST_VISIT_DATE
CohortStartDates	<i>Date</i>	Available only when using the V4 API. A

		comma-separated list of cohort start dates.
CohortEndDates	<i>Date</i>	Available only when using the V4 API. A comma-separated list of cohort end dates.
SamplesReadCounts	<i>String</i>	Comma separated list of samples read counts when the response data is sampled.
SamplingSpaceSizes	<i>String</i>	Comma separated list of samples space sizes counts when the response data is sampled.

Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Segments	<i>String</i>	Segments the data returned for your request. Either a SegmentId or a custom segment.
Profile	<i>String</i>	The Profile ID or website URL to retrieve data from.

Stored Procedures

Stored procedures are available to complement the data available from the [Data Model](#). It may be necessary to update data available from a view using a stored procedure because the data does not provide for direct, table-like, two-way updates. In these situations, the retrieval of the data is done using the appropriate view or table, while the update is done by calling a stored procedure. Stored procedures take a list of parameters and return back a dataset that contains the collection of tuples that constitute the response.

Google Analytics Adapter Stored Procedures

Name	Description
CreateCustomSchema	Creates a custom schema file based on the specified Dimensions and Metrics.
GetOAuthAccessToken	Obtains the OAuth access token to be used for authentication with various Google services.

GetOAuthAuthorizationURL	Obtains the OAuth authorization URL used for authentication with various Google services.
RefreshOAuthAccessToken	Obtains the OAuth access token to be used for authentication with various Google services.

CreateCustomSchema

Creates a custom schema file based on the specified Dimensions and Metrics.

Input

Name	Type	Required	Description
TableName	<i>String</i>	<i>True</i>	The name for the new table.
Description	<i>String</i>	<i>False</i>	An optional description for the table.
OutputFolder	<i>String</i>	<i>False</i>	The path to output the new schema file to. The value for the Location connection string property will be used by default. You will need to set the Location connection property to the location of your schema files.
Dimensions	<i>String</i>	<i>False</i>	A comma-separated list of dimensions to include in the schema file.
Metrics	<i>String</i>	<i>True</i>	A comma-separated list of metrics to include in the schema file.
Profile	<i>String</i>	<i>False</i>	The Profile ID or website URL to retrieve data

from.

Result Set Columns

Name	Type	Description
Success	<i>String</i>	Whether or not the schema was created successfully.
SchemaFile	<i>String</i>	The generated schema file.

GetOAuthAccessToken

Obtains the OAuth access token to be used for authentication with various Google services.

Input

Name	Type	Required	Description
AuthMode	<i>String</i>	<i>True</i>	The type of authentication mode to use. The allowed values are <i>APP</i> , <i>WEB</i> . The default value is <i>WEB</i> .
Verifier	<i>String</i>	<i>False</i>	The verifier code returned by Google after permission for the app to connect has been granted. <i>WEB</i> AuthMode only.

Scope	<i>String</i>	<i>True</i>	<p>The scope of access to Google APIs. By default, access to all APIs used by this data provider will be specified.</p> <p>The default value is https://www.googleapis.com/auth/analytics.readonly.</p>
CallbackURL	<i>String</i>	<i>False</i>	<p>This field determines where the response is sent. The value of this parameter must exactly match one of the values registered in the APIs Console, including the HTTP or HTTPS schemes, capitalization, and trailing forward slash ('/').</p>
Prompt	<i>String</i>	<i>True</i>	<p>This field indicates the prompt to present the user. The default is <i>CONSENT</i>, so a given user will see a consent page every time, even if they have previously given consent to the application for a given set of scopes. If it is set to <i>SELECT_ACCOUNT</i>, the user will be prompted to select the account to connect to. Lastly, if it is set to <i>NONE</i>, no authentication or consent screens will be displayed to the user.</p> <p>The allowed values are <i>NONE</i>, <i>CONSENT</i>, <i>SELECT_ACCOUNT</i>.</p> <p>The default value is <i>CONSENT</i>.</p>
AccessType	<i>String</i>	<i>True</i>	<p>This field indicates if your application needs to access a Google API when the user is not present at the browser. This parameter defaults to <i>OFFLINE</i>. If your application needs to refresh access tokens when the user is not present at the browser, then use <i>OFFLINE</i>. This will result in your application obtaining a refresh token the first time your application exchanges an authorization code for a user.</p> <p>The allowed values are <i>ONLINE</i>, <i>OFFLINE</i>.</p> <p>The default value is <i>OFFLINE</i>.</p>

State	<i>String</i>	<i>False</i>	This field indicates any state that may be useful to your application upon receipt of the response. Your application receives the same value it sent, as this parameter makes a round-trip to Google authorization server and back. Uses include redirecting the user to the correct resource in your site, using nonces, and mitigating cross-site request forgery.
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Result Set Columns

Name	Type	Description
OAuthAccessToken	<i>String</i>	The authentication token returned from Google. This can be used in subsequent calls to other operations for this particular service.
OAuthRefreshToken	<i>String</i>	A token that may be used to obtain a new access token.
ExpiresIn	<i>String</i>	The remaining lifetime on the access token.

GetOAuthAuthorizationURL

Obtains the OAuth authorization URL used for authentication with various Google services.

Input

Name	Type	Required	Description
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Scope	<i>String</i>	<i>True</i>	<p>The scope of access to Google APIs. By default, access to all APIs used by this data provider will be specified.</p> <p>The default value is https://www.googleapis.com/auth/analytics.readonly.</p>
CallbackURL	<i>String</i>	<i>False</i>	<p>This field determines where the response is sent. The value of this parameter must exactly match one of the values registered in the APIs Console, including the HTTP or HTTPS schemes, case, and trailing forward slash ('/').</p>
Prompt	<i>String</i>	<i>True</i>	<p>This field indicates the prompt to present the user. The default is <i>CONSENT</i>, so a given user will see a consent page every time, even if they have previously given consent to the application for a given set of scopes. If it is set to <i>SELECT_ACCOUNT</i>, the user will be prompted to select the account to connect to. Lastly, if it is set to <i>NONE</i>, no authentication or consent screens will be displayed to the user.</p> <p>The allowed values are <i>NONE</i>, <i>CONSENT</i>, <i>SELECT_ACCOUNT</i>.</p> <p>The default value is <i>CONSENT</i>.</p>
AccessType	<i>String</i>	<i>True</i>	<p>This field indicates if your application needs to access a Google API when the user is not present at the browser. This parameter defaults to <i>OFFLINE</i>. If your application needs to refresh access tokens when the user is not present at the browser, then use <i>OFFLINE</i>. This will result in your application obtaining a refresh token the first time your application exchanges an authorization code for a user.</p> <p>The allowed values are <i>ONLINE</i>, <i>OFFLINE</i>.</p> <p>The default value is <i>OFFLINE</i>.</p>

State	<i>String</i>	<i>False</i>	This field indicates any state that may be useful to your application upon receipt of the response. Your application receives the same value it sent, as this parameter makes a round-trip to the Google authorization server and back. Possible uses include redirecting the user to the correct resource in your site, using nonces, and mitigating cross-site request forgery.
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Result Set Columns

Name	Type	Description
URL	<i>String</i>	The URL to complete user authentication.

RefreshOAuthAccessToken

Obtains the OAuth access token to be used for authentication with various Google services.

Input

Name	Type	Required	Description
OAuthRefreshToken	<i>String</i>	<i>True</i>	The refresh token returned from the original authorization code exchange.

Result Set Columns

Name	Type	Description
OAuthAccessToken	String	The authentication token returned from Google. This can be used in subsequent calls to other operations for this particular service.
OAuthRefreshToken	String	The authentication token returned from Google. This can be used in subsequent calls to other operations for this particular service.
ExpiresIn	String	The remaining lifetime on the access token.

Connection String Options

The connection string properties are the various options that can be used to establish a connection. This section provides a complete list of the options you can configure in the connection string for this provider. Click the links for further details.

Api Version	Specify the API version you want to use.
Auth Scheme	The type of authentication to use when connecting to Google Analytics.
Default Filter	A default filter to be applied to all queries. Convenient for setting default Dimensions, StartDate, EndDate, and Segments for all queries. These values will be overridden if set in the query. Example value: Dimensions='Year' AND EndDate='Today'.
Firewall Password	A password used to authenticate to a proxy-based firewall.
Firewall Port	The TCP port for a proxy-based firewall.

Firewall Server	The name or IP address of a proxy-based firewall.
Firewall Type	The protocol used by a proxy-based firewall.
Firewall User	The user name to use to authenticate with a proxy-based firewall.
Include Empty Rows	This connection property can be set only when using the V4 API. If set to false, the provider does not include rows if all the retrieved metrics are equal to zero. The default is true which will include these rows.
Initiate OAuth	Set this property to initiate the process to obtain or refresh the OAuth access token when you connect.
Location	A path to the directory that contains the schema files defining tables, views, and stored procedures.
Log Modules	Core modules to be included in the log file.
Max Rows	Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.
OAuth Access Token	The access token for connecting using OAuth.
OAuth Client Id	The client ID assigned when you register your application with an OAuth authorization server.
OAuth Client Secret	The client secret assigned when you register your application with an OAuth authorization server.
OAuth Expires In	The lifetime in seconds of the OAuth AccessToken.
OAuth JWT Cert	The JWT Certificate store.
OAuth JWT Cert Password	The password for the OAuth JWT certificate.

OAuth JWT Cert Subject	The subject of the OAuth JWT certificate.
OAuth JWT Cert Type	The type of key store containing the JWT Certificate.
OAuth JWT Issuer	The issuer of the Java Web Token.
OAuth JWT Subject	The user subject for which the application is requesting delegated access.
OAuth Refresh Token	The OAuth refresh token for the corresponding OAuth access token.
OAuth Settings Location	The location of the settings file where OAuth values are saved when InitiateOAuth is set to GETANDREFRESH or REFRESH. Alternatively, this can be held in memory by specifying a value starting with memory://.
OAuth Token Timestamp	The Unix epoch timestamp in milliseconds when the current Access Token was created.
OAuth Verifier	The verifier code returned from the OAuth authorization URL.
Other	These hidden properties are used only in specific use cases.
Pagesize	The maximum number of results to return per page from Google Analytics.
Profile	The Google Analytics View (Profile). This can be set to either the Id or website URL for the Profile. If not specified, the first Profile returned will be used.
Proxy Auth Scheme	The authentication type to use to authenticate to the ProxyServer proxy.
Proxy Auto Detect	This indicates whether to use the system proxy settings or not. This takes precedence over other proxy settings, so you'll need to set ProxyAutoDetect to FALSE in order use custom proxy settings.
Proxy	A semicolon separated list of destination hostnames or IPs that are exempt

Exceptions	from connecting through the ProxyServer .
Proxy Password	A password to be used to authenticate to the ProxyServer proxy.
Proxy Port	The TCP port the ProxyServer proxy is running on.
Proxy Server	The hostname or IP address of a proxy to route HTTP traffic through.
Proxy SSL Type	The SSL type to use when connecting to the ProxyServer proxy.
Proxy User	A user name to be used to authenticate to the ProxyServer proxy.
Sampling Level	The desired sampling level. Can be set to run faster at the cost of accuracy or for higher accuracy but a decrease in query execution speed.
SSL Server Cert	The certificate to be accepted from the server when connecting using TLS/SSL.
Timeout	The value in seconds until the timeout error is thrown, canceling the operation.
Use Resource Quotas	This connection property can be set only when using the V4 API. If set to true, the provider will include the useResourceQuotas header in each request. This header will enable resource based quotas for a given request.

Api Version

Specify the API version you want to use.

Data Type

string

Default Value

"V4"

Remarks

Set this property to V3 to use the Google Analytics v3 API or V4 to use the Google Analytics v4 API.

Auth Scheme

The type of authentication to use when connecting to Google Analytics.

Data Type

string

Default Value

"Auto"

Remarks

- Auto: Lets the driver decide automatically based on the other connection properties you have set.
- OAuth: Set this to perform OAuth authentication using a standard user account.
- OAuthJWT: Set this to perform OAuth authentication using an OAuth service account.
- GCPIstanceAccount: Set this to get Access Token from Google Cloud Platform instance.

Default Filter

A default filter to be applied to all queries. Convenient for setting default Dimensions, StartDate, EndDate, and Segments for all queries. These values will be overridden if set in the query. Example value: Dimensions='Year' AND EndDate='Today'.

Data Type

string

Default Value

"EndDate='Today'"

Remarks

A default filter to be applied to all queries. Convenient for setting default Dimensions, StartDate, EndDate, and Segments for all queries. These values will be overridden if set in the query. Example value: Dimensions='Year' AND EndDate='Today'

Firewall Password

A password used to authenticate to a proxy-based firewall.

Data Type

string

Default Value

""

Remarks

This property is passed to the proxy specified by [FirewallServer](#) and [FirewallPort](#), following the authentication method specified by [FirewallType](#).

Firewall Port

The TCP port for a proxy-based firewall.

Data Type

int

Default Value

0

Remarks

This specifies the TCP port for a proxy allowing traversal of a firewall. Use [FirewallServer](#) to specify the name or IP address. Specify the protocol with [FirewallType](#).

Firewall Server

The name or IP address of a proxy-based firewall.

Data Type

string

Default Value

""

Remarks

This property specifies the IP address, DNS name, or host name of a proxy allowing traversal of a firewall. The protocol is specified by [FirewallType](#): Use [FirewallServer](#) with this property to connect through SOCKS or do tunneling. Use [ProxyServer](#) to connect to an HTTP proxy.

Note that the adapter uses the system proxy by default. To use a different proxy, set [ProxyAutoDetect](#) to false.

Firewall Type

The protocol used by a proxy-based firewall.

Data Type

string

Default Value

"NONE"

Remarks

This property specifies the protocol that the adapter will use to tunnel traffic through the [FirewallServer](#) proxy. Note that by default, the adapter connects to the system proxy; to disable this behavior and connect to one of the following proxy types, set [ProxyAutoDetect](#) to false.

Type	Default Port	Description
TUNNEL	80	When this is set, the adapter opens a connection to Google Analytics and traffic flows back and forth through the proxy.
SOCKS4	1080	When this is set, the adapter sends data through the SOCKS 4 proxy specified by FirewallServer and FirewallPort and passes the FirewallUser value to the proxy, which determines if the connection request should be granted.
SOCKS5	1080	When this is set, the adapter sends data through the SOCKS 5 proxy specified by FirewallServer and FirewallPort . If your proxy requires authentication, set FirewallUser and FirewallPassword to credentials the proxy recognizes.

To connect to HTTP proxies, use [ProxyServer](#) and [ProxyPort](#). To authenticate to HTTP proxies, use [ProxyAuthScheme](#), [ProxyUser](#), and [ProxyPassword](#).

Firewall User

The user name to use to authenticate with a proxy-based firewall.

Data Type

string

Default Value

""

Remarks

The [FirewallUser](#) and [FirewallPassword](#) properties are used to authenticate against the proxy specified in [FirewallServer](#) and [FirewallPort](#), following the authentication method specified in [FirewallType](#).

Include Empty Rows

This connection property can be set only when using the V4 API. If set to false, the provider does not include rows if all the retrieved metrics are equal to zero. The default is true which will include these rows.

Data Type

string

Default Value

"TRUE"

Remarks

Allowed Values:

TRUE	The provider includes the rows where all the retrieved metrics are equal to zero.
FALSE	The provider does not include the rows where all the retrieved metrics are equal to zero.

Note that it is still possible for no rows to be returned with this set to TRUE depending on the dimensions included in the query. This property will only work when the cardinality of the dimension is known over the date range (such as with the Date dimension). If the cardinality is unknown or not defined, such as with the ProductName dimension on the Ecommerce table, no results would be returned.

Initiate OAuth

Set this property to initiate the process to obtain or refresh the OAuth access token when you connect.

Data Type

string

Default Value

"OFF"

Remarks

The following options are available:

1. **OFF:** Indicates that the OAuth flow will be handled entirely by the user. An OAuthAccessToken will be required to authenticate.
2. **GETANDREFRESH:** Indicates that the entire OAuth Flow will be handled by the adapter. If no token currently exists, it will be obtained by prompting the user via the browser. If a token exists, it will be refreshed when applicable.
3. **REFRESH:** Indicates that the adapter will only handle refreshing the OAuthAccessToken. The user will never be prompted by the adapter to authenticate via the browser. The user must handle obtaining the OAuthAccessToken and

OAuthRefreshToken initially.

Location

A path to the directory that contains the schema files defining tables, views, and stored procedures.

Data Type

string

Default Value

"%APPDATA%\\CData\\GoogleAnalytics Data Provider\\Schema"

Remarks

The path to a directory which contains the schema files for the adapter (.rsd files for tables and views, .rsb files for stored procedures). The folder location can be a relative path from the location of the executable. The Location property is only needed if you want to customize definitions (for example, change a column name, ignore a column, and so on) or extend the data model with new tables, views, or stored procedures.

If left unspecified, the default location is "%APPDATA%\\CData\\GoogleAnalytics Data Provider\\Schema" with **%APPDATA%** being set to the user's configuration directory:

Platform	%APPDATA%
Windows	The value of the APPDATA environment variable
Mac	~/Library/Application Support
Linux	~/config

Log Modules

Core modules to be included in the log file.

Data Type

string

Default Value

""

Remarks

Only the modules specified (separated by ';') will be included in the log file. By default all modules are included.

Max Rows

Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.

Data Type

int

Default Value

-1

Remarks

Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.

OAuth Access Token

The access token for connecting using OAuth.

Data Type

string

Default Value

""

Remarks

The OAuthAccessToken property is used to connect using OAuth. The OAuthAccessToken is retrieved from the OAuth server as part of the authentication process. It has a server-dependent timeout and can be reused between requests.

The access token is used in place of your user name and password. The access token protects your credentials by keeping them on the server.

OAuth Client Id

The client ID assigned when you register your application with an OAuth authorization server.

Data Type

string

Default Value

""

Remarks

As part of registering an OAuth application, you will receive the OAuthClientId value, sometimes also called a consumer key, and a client secret, the [OAuthClientSecret](#).

OAuth Client Secret

The client secret assigned when you register your application with an OAuth authorization server.

Data Type

string

Default Value

""

Remarks

As part of registering an OAuth application, you will receive the [OAuthClientId](#), also called a consumer key. You will also receive a client secret, also called a consumer secret. Set the client secret in the [OAuthClientSecret](#) property.

OAuth Expires In

The lifetime in seconds of the OAuth AccessToken.

Data Type

string

Default Value

""

Remarks

Pair with OAuthTokenTimestamp to determine when the AccessToken will expire.

OAuth JWT Cert

The JWT Certificate store.

Data Type

string

Default Value

""

Remarks

The name of the certificate store for the client certificate.

The [OAuthJWTCertType](#) field specifies the type of the certificate store specified by [OAuthJWTCert](#). If the store is password protected, specify the password in [OAuthJWTCertPassword](#).

[OAuthJWTCert](#) is used in conjunction with the [OAuthJWTCertSubject](#) field in order to specify client certificates. If [OAuthJWTCert](#) has a value, and [OAuthJWTCertSubject](#) is set, a search for a certificate is initiated. Please refer to the [OAuthJWTCertSubject](#) field for details.

Designations of certificate stores are platform-dependent.

The following are designations of the most common User and Machine certificate stores in Windows:

MY	A certificate store holding personal certificates with their associated private keys.
CA	Certifying authority certificates.
ROOT	Root certificates.
SPC	Software publisher certificates.

In Java, the certificate store normally is a file containing certificates and optional private keys.

When the certificate store type is `PFXFile`, this property must be set to the name of the file. When the type is `PFXBlob`, the property must be set to the binary contents of a PFX file (i.e. PKCS12 certificate store).

OAuth JWT Cert Password

The password for the OAuth JWT certificate.

Data Type

string

Default Value

""

Remarks

If the certificate store is of a type that requires a password, this property is used to specify that password in order to open the certificate store.

This is not required when using the GOOGLEJSON [OAuthJWT CertType](#). Google JSON keys are not encrypted.

OAuth JWT Cert Subject

The subject of the OAuth JWT certificate.

Data Type

string

Default Value

"*"

Remarks

When loading a certificate the subject is used to locate the certificate in the store.

If an exact match is not found, the store is searched for subjects containing the value of the property.

If a match is still not found, the property is set to an empty string, and no certificate is selected.

The special value "*" picks the first certificate in the certificate store.

The certificate subject is a comma separated list of distinguished name fields and values. For instance "CN=www.server.com, OU=test, C=US, E=support@cdata.com". Common fields and their meanings are displayed below.

Field	Meaning
CN	Common Name. This is commonly a host name like www.server.com.
O	Organization
OU	Organizational Unit
L	Locality
S	State
C	Country
E	Email Address

If a field value contains a comma it must be quoted.

OAuth JWT Cert Type

The type of key store containing the JWT Certificate.

Data Type

string

Default Value

""

Remarks

This property can take one of the following values:

USER - default	For Windows, this specifies that the certificate store is a certificate store owned by the current user. <i>Note:</i> This store type is not available in Java.
MACHINE	For Windows, this specifies that the certificate store is a machine store. <i>Note:</i> this store type is not available in Java.
PFXFILE	The certificate store is the name of a PFX (PKCS12) file containing certificates.
PFXBLOB	The certificate store is a string (base-64-encoded) representing a certificate store in PFX (PKCS12) format.
JKSFILE	The certificate store is the name of a Java key store (JKS) file containing certificates. <i>Note:</i> this store type is only available in Java.
JKSBLOB	The certificate store is a string (base-64-encoded) representing a certificate store in Java key store (JKS) format. <i>Note:</i> this store type is only available in Java.
PEMKEY_FILE	The certificate store is the name of a PEM-encoded file that contains a private key and an optional certificate.
PEMKEY_BLOB	The certificate store is a string (base64-encoded) that contains a private key and an optional certificate.

PUBLIC_KEY_FILE	The certificate store is the name of a file that contains a PEM- or DER-encoded public key certificate.
PUBLIC_KEY_BLOB	The certificate store is a string (base-64-encoded) that contains a PEM- or DER-encoded public key certificate.
SSHPUBLIC_KEY_FILE	The certificate store is the name of a file that contains an SSH-style public key.
SSHPUBLIC_KEY_BLOB	The certificate store is a string (base-64-encoded) that contains an SSH-style public key.
P7BFILE	The certificate store is the name of a PKCS7 file containing certificates.
PPKFILE	The certificate store is the name of a file that contains a PPK (PuTTY Private Key).
XMLFILE	The certificate store is the name of a file that contains a certificate in XML format.
XMLBLOB	The certificate store is a string that contains a certificate in XML format.
GOOGLEJSON	The certificate store is the name of a JSON file containing the service account information. Only valid when connecting to a Google service.

OAuth JWT Issuer

The issuer of the Java Web Token.

Data Type

string

Default Value

""

Remarks

The issuer of the Java Web Token. This is typically either the Client ID or Email Address of the OAuth Application.

This is not required when using the GOOGLEJSON [OAuthJWTCertType](#). Google JSON keys contain a copy of the issuer account.

OAuth JWT Subject

The user subject for which the application is requesting delegated access.

Data Type

string

Default Value

""

Remarks

The user subject for which the application is requesting delegated access. Typically, the user account name or email address.

OAuth Refresh Token

The OAuth refresh token for the corresponding OAuth access token.

Data Type

string

Default Value

""

Remarks

The `OAuthRefreshToken` property is used to refresh the `OAuthAccessToken` when using OAuth authentication.

OAuth Settings Location

The location of the settings file where OAuth values are saved when `InitiateOAuth` is set to `GETANDREFRESH` or `REFRESH`. Alternatively, this can be held in memory by specifying a value starting with `memory://`.

Data Type

string

Default Value

"%APPDATA%\\CDData\\GoogleAnalytics Data Provider\\OAuthSettings.txt"

Remarks

When `InitiateOAuth` is set to `GETANDREFRESH` or `REFRESH`, the adapter saves OAuth values to avoid requiring the user to manually enter OAuth connection properties and allowing the credentials to be shared across connections or processes.

Alternatively to specifying a file path, memory storage can be used instead. Memory locations are specified by using a value starting with `'memory://'` followed by a unique identifier for that set of credentials (ex: `memory://user1`). The identifier can be anything you choose but should be unique to the user. Unlike with the file based storage, you must manually store the credentials when closing the connection with memory storage to be able to set them in the connection when the process is started again. The OAuth property values can be retrieved with a query to the `sys_connection_props` system table. If there are multiple connections using the same credentials, the properties should be read from the last connection to be closed.

If left unspecified, the default location is "%APPDATA%\\CData\\GoogleAnalytics Data Provider\\OAuthSettings.txt" with **%APPDATA%** being set to the user's configuration directory:

Platform	%APPDATA%
Windows	The value of the APPDATA environment variable
Mac	~/Library/Application Support
Linux	~/.config

OAuth Token Timestamp

The Unix epoch timestamp in milliseconds when the current Access Token was created.

Data Type

string

Default Value

""

Remarks

Pair with OAuthExpiresIn to determine when the AccessToken will expire.

OAuth Verifier

The verifier code returned from the OAuth authorization URL.

Data Type

string

Default Value

""

Remarks

The verifier code returned from the OAuth authorization URL. This can be used on systems where a browser cannot be launched such as headless systems.

Authentication on Headless Machines

See [Getting Started](#) to obtain the [OAuthVerifier](#) value.

Set [OAuthSettingsLocation](#) along with [OAuthVerifier](#). When you connect, the adapter exchanges the [OAuthVerifier](#) for the OAuth authentication tokens and saves them, encrypted, to the specified file. Set [InitiateOAuth](#) to GETANDREFRESH automate the exchange.

Once the OAuth settings file has been generated, you can remove [OAuthVerifier](#) from the connection properties and connect with [OAuthSettingsLocation](#) set.

To automatically refresh the OAuth token values, set [OAuthSettingsLocation](#) and additionally set [InitiateOAuth](#) to REFRESH.

Other

These hidden properties are used only in specific use cases.

Data Type

string

Default Value

""

Remarks

The properties listed below are available for specific use cases. Normal driver use cases and functionality should not require these properties.

Specify multiple properties in a semicolon-separated list.

Integration and Formatting

DefaultColumnSize	Sets the default length of string fields when the data source does not provide column length in the metadata. The default value is 2000.
ConvertDateTimeToGMT	Determines whether to convert date-time values to GMT, instead of the local time of the machine.
RecordToFile=filename	Records the underlying socket data transfer to the specified file.

Pagesize

The maximum number of results to return per page from Google Analytics.

Data Type

int

Default Value

10000

Remarks

The Pagesize property affects the maximum number of results to return per page from Google Analytics. Setting a higher value may result in better performance at the cost of additional memory eaten up per page consumed.

Profile

The Google Analytics View (Profile). This can be set to either the Id or website URL for the Profile. If not specified, the first Profile returned will be used.

Data Type

string

Default Value

""

Remarks

This value can be retrieved from the Profiles table or will be retrieved automatically if this value is not set.

Proxy Auth Scheme

The authentication type to use to authenticate to the ProxyServer proxy.

Data Type

string

Default Value

"BASIC"

Remarks

This value specifies the authentication type to use to authenticate to the HTTP proxy specified by [ProxyServer](#) and [ProxyPort](#).

Note that the adapter will use the system proxy settings by default, without further configuration needed; if you want to connect to another proxy, you will need to set [ProxyAutoDetect](#) to false, in addition to [ProxyServer](#) and [ProxyPort](#). To authenticate, set [ProxyAuthScheme](#) and set [ProxyUser](#) and [ProxyPassword](#), if needed.

The authentication type can be one of the following:

- **BASIC:** The adapter performs HTTP BASIC authentication.
- **DIGEST:** The adapter performs HTTP DIGEST authentication.
- **NEGOTIATE:** The adapter retrieves an NTLM or Kerberos token based on the applicable protocol for authentication.
- **PROPRIETARY:** The adapter does not generate an NTLM or Kerberos token. You must supply this token in the Authorization header of the HTTP request.

If you need to use another authentication type, such as SOCKS 5 authentication, see [FirewallType](#).

Proxy Auto Detect

This indicates whether to use the system proxy settings or not. This takes precedence over other proxy settings, so you'll need to set `ProxyAutoDetect` to `FALSE` in order use custom proxy settings.

Data Type

bool

Default Value

true

Remarks

This takes precedence over other proxy settings, so you'll need to set ProxyAutoDetect to FALSE in order use custom proxy settings.

NOTE: When this property is set to True, the proxy used is determined as follows:

- A search from the JVM properties (**http.proxy**, **https.proxy**, **socksProxy**, **etc.**) is performed.
- In the case that the JVM properties don't exist, a search from **java.home/lib/net.properties** is performed.
- In the case that java.net.useSystemProxies is set to True, a search from **the SystemProxy** is performed.
- In Windows only, an attempt is made to retrieve these properties from the **Internet Options** in the **registry**.

To connect to an HTTP proxy, see [ProxyServer](#). For other proxies, such as SOCKS or tunneling, see [FirewallType](#).

Proxy Exceptions

A semicolon separated list of destination hostnames or IPs that are exempt from connecting through the ProxyServer .

Data Type

string

Default Value

""

Remarks

The [ProxyServer](#) is used for all addresses, except for addresses defined in this property. Use semicolons to separate entries.

Note that the adapter uses the system proxy settings by default, without further configuration needed; if you want to explicitly configure proxy exceptions for this connection, you need to set [ProxyAutoDetect](#) = false, and configure [ProxyServer](#) and [ProxyPort](#). To authenticate, set [ProxyAuthScheme](#) and set [ProxyUser](#) and [ProxyPassword](#), if needed.

Proxy Password

A password to be used to authenticate to the ProxyServer proxy.

Data Type

string

Default Value

""

Remarks

This property is used to authenticate to an HTTP proxy server that supports NTLM (Windows), Kerberos, or HTTP authentication. To specify the HTTP proxy, you can set [ProxyServer](#) and [ProxyPort](#). To specify the authentication type, set [ProxyAuthScheme](#).

If you are using HTTP authentication, additionally set [ProxyUser](#) and [ProxyPassword](#) to HTTP proxy.

If you are using NTLM authentication, set [ProxyUser](#) and [ProxyPassword](#) to your Windows password. You may also need these to complete Kerberos authentication.

For SOCKS 5 authentication or tunneling, see [FirewallType](#).

By default, the adapter uses the system proxy. If you want to connect to another proxy, set [ProxyAutoDetect](#) to false.

Proxy Port

The TCP port the ProxyServer proxy is running on.

Data Type

int

Default Value

80

Remarks

The port the HTTP proxy is running on that you want to redirect HTTP traffic through. Specify the HTTP proxy in [ProxyServer](#). For other proxy types, see [FirewallType](#).

Proxy Server

The hostname or IP address of a proxy to route HTTP traffic through.

Data Type

string

Default Value

""

Remarks

The hostname or IP address of a proxy to route HTTP traffic through. The adapter can use the HTTP, Windows (NTLM), or Kerberos authentication types to authenticate to an HTTP proxy.

If you need to connect through a SOCKS proxy or tunnel the connection, see [FirewallType](#).

By default, the adapter uses the system proxy. If you need to use another proxy, set [ProxyAutoDetect](#) to false.

Proxy SSL Type

The SSL type to use when connecting to the ProxyServer proxy.

Data Type

string

Default Value

"AUTO"

Remarks

This property determines when to use SSL for the connection to an HTTP proxy specified by [ProxyServer](#). This value can be AUTO, ALWAYS, NEVER, or TUNNEL. The applicable values are the following:

AUTO	Default setting. If the URL is an HTTPS URL, the adapter will use the TUNNEL option. If the URL is an HTTP URL, the component will use the NEVER option.
ALWAYS	The connection is always SSL enabled.
NEVER	The connection is not SSL enabled.
TUNNEL	The connection is through a tunneling proxy. The proxy server opens a connection to the remote host and traffic flows back and forth through the proxy.

Proxy User

A user name to be used to authenticate to the ProxyServer proxy.

Data Type

string

Default Value

""

Remarks

The [ProxyUser](#) and [ProxyPassword](#) options are used to connect and authenticate against the HTTP proxy specified in [ProxyServer](#).

You can select one of the available authentication types in [ProxyAuthScheme](#). If you are using HTTP authentication, set this to the user name of a user recognized by the HTTP proxy. If you are using Windows or Kerberos authentication, set this property to a user name in one of the following formats:

```
user@domain  
domain\user
```

Sampling Level

The desired sampling level. Can be set to run faster at the cost of accuracy or for higher accuracy but a decrease in query execution speed.

Data Type

string

Default Value

"DEFAULT"

Remarks

Allowed Values:

DEFAULT	Returns response with a sample size that balances speed and accuracy.
FASTER	Available only when using the V3 API. Returns a fast response with a smaller sample size.
HIGHER_PRECISION	Available only when using the V3 API. Returns a more accurate response using a large sample size, but this may result in the response being slower.
SMALL	Similar to FASTER, but for the V4 API.
LARGE	Similar to HIGHER_PRECISION, but for the V4 API.

SSL Server Cert

The certificate to be accepted from the server when connecting using TLS/SSL.

Data Type

string

Default Value

""

Remarks

If using a TLS/SSL connection, this property can be used to specify the TLS/SSL certificate to be accepted from the server. Any other certificate that is not trusted by the machine is rejected.

This property can take the following forms:

Description	Example
-------------	---------

A full PEM Certificate (example shortened for brevity)	-----BEGIN CERTIFICATE----- MIICHTCCAe4CAQAwDQYJKoZIhvd.....Qw == -----END CERTIFICATE-----
A path to a local file containing the certificate	C:\cert.cer
The public key (example shortened for brevity)	-----BEGIN RSA PUBLIC KEY----- MIGfMA0GCSq.....AQAB -----END RSA PUBLIC KEY-----
The MD5 Thumbprint (hex values can also be either space or colon separated)	ca1b5bda5a1529c58a1e9e09828d70e4
The SHA1 Thumbprint (hex values can also be either space or colon separated)	34a929226ae0819f2ec14b4a3d904f801c bb150d

If not specified, any certificate trusted by the machine is accepted.

Certificates are validated as trusted by the machine based on the System's trust store. The trust store used is the 'javax.net.ssl.trustStore' value specified for the system. If no value is specified for this property, Java's default trust store is used (for example, JAVA_HOME\lib\security\cacerts).

Use '*' to signify to accept all certificates. Note that this is not recommended due to security concerns.

Timeout

The value in seconds until the timeout error is thrown, canceling the operation.

Data Type

int

Default Value

60

Remarks

If Timeout = 0, operations do not time out. The operations run until they complete successfully or until they encounter an error condition.

If Timeout expires and the operation is not yet complete, the adapter throws an exception.

Use Resource Quotas

This connection property can be set only when using the V4 API. If set to true, the provider will include the useResourceQuotas header in each request. This header will enable resource based quotas for a given request.

Data Type

bool

Default Value

false

Remarks

This connection property can be set only when using the V4 API. If set to true, the provider will include the useResourceQuotas header in each request. This header will enable resource based quotas for a given request.

TIBCO Product Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, and join the TIBCO Community.

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The [TIBCO Product Documentation](#) website is updated frequently and is more current than any other documentation included with the product.

Product-Specific Documentation

The following documentation for this product is available on the [TIBCO® Data Virtualization](#) page.

- **Users**
 - TDV Getting Started Guide
 - TDV User Guide
 - TDV Web UI User Guide
 - TDV Client Interfaces Guide
 - TDV Tutorial Guide
 - TDV Northbay Example
- **Administration**
 - TDV Installation and Upgrade Guide
 - TDV Administration Guide
 - TDV Active Cluster Guide
 - TDV Security Features Guide
- **Data Sources**

TDV Adapter Guides

TDV Data Source Toolkit Guide (Formerly Extensibility Guide)

- **References**

TDV Reference Guide

TDV Application Programming Interface Guide

- **Other**

TDV Business Directory Guide

TDV Discovery Guide

- *TIBCO TDV and Business Directory Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

Release Version Support

TDV 8.5 is designated as a Long Term Support (LTS) version. Some release versions of TIBCO® Data Virtualization products are selected to be long-term support (LTS) versions. Defect corrections will typically be delivered in a new release version and as hotfixes or service packs to one or more LTS versions. See also

https://docs.tibco.com/pub/tdv/general/LTS/tdv_LTS_releases.htm.

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