



Enterprise Chat and Email Administrator's Guide to Data Adapters, Release 11.6(1)

For Unified Contact Center Enterprise

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Preface

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Welcome to the Enterprise Chat and Email (ECE) feature, which provides multichannel interaction software used by businesses all over the world as a core component to the Unified Contact Center Enterprise product line. ECE offers a unified suite of the industry's best applications for chat and email interaction management to enable a blended agent for handling of web chat, email and voice interactions.

About This Guide

Enterprise Chat and Email Administrator's Guide to Data Adapters introduces the Data Adapters and shows how to set up data links to connect to external sources.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation as an RSS feed and delivers content directly to your desktop using a reader application. The RSS feeds are a free service.

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We appreciate your comments.

Field Alerts and Field Notices

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Log into www.cisco.com and then access the tool at <http://www.cisco.com/cisco/support/notifications.html>

Document Conventions

This guide uses the following typographical conventions.

Convention	Indicates
<i>Italic</i>	Emphasis. Or the title of a published document.
Bold	Labels of items on the user interface, such as buttons, boxes, and lists. Or text that must be typed by the user.
Monospace	The name of a file or folder, a database table column or value, or a command.
<i>Variable</i>	User-specific text; varies from one user or installation to another.


Document conventions

Other Learning Resources

Various learning tools are available within the product, as well as on the product CD and our web site. You can also request formal end-user or technical training.

Online Help

The product includes topic-based as well as context-sensitive help.

Use	To view
 Help button	Topics in <i>Enterprise Chat and Email Help</i> ; the Help button appears in the Console toolbar on every screen.
F1 keypad button	Context-sensitive information about the item selected on the screen.

Online help options

Document Set

The Enterprise Chat and Email documentation is available in the `Documents` folder on the product CD. The latest versions of all Cisco documentation can be found online at <http://www.cisco.com>

The document set contains the following guides:

- ▶ *System Requirements for Enterprise Chat and Email*
- ▶ *Enterprise Chat and Email Installation Guide*
- ▶ *Enterprise Chat and Email Browser Settings Guide*

User guides for agents and supervisors

- ▶ *Enterprise Chat and Email Agent's Guide*
- ▶ *Enterprise Chat and Email Supervisor's Guide*

User guides for administrators

- ▶ *Enterprise Chat and Email Administrator's Guide to Administration Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to Routing and Workflows*
- ▶ *Enterprise Chat and Email Administrator's Guide to Chat and Collaboration Resources*
- ▶ *Enterprise Chat and Email Administrator's Guide to Data Adapters*
- ▶ *Enterprise Chat and Email Administrator's Guide to Email Resources*
- ▶ *Enterprise Chat and Email Administrator's Guide to Reports Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to System Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to Tools Console*

1

Data Adapters Basics

- ▶ [Do You Need Data Adapters?](#)
- ▶ [How Do Data Adapters Work?](#)
- ▶ [Where and How Can You Use Data Adapters?](#)
- ▶ [Elements of the User Interface](#)

The Data Adapter module provides you with a quick and easy method to integrate with external sources of information residing within your enterprise, or on the web. It is a flexible integration tool for accessing data from external sources such as local and remote databases, HTTP or HTTPS services, XML files, etc. The data is then available through XML APIs for automated processing and display.

External information is accessed and processed through two-way connections called data links. Data links can be used to display and process external information in the application, as well as to extract and present information in external applications.

Do You Need Data Adapters?

The benefits of using the Data Adapter is manifold, but consider the following factors to evaluate the need to set up data links.

- ▶ Who owns the data?

If an external system controls the reading and writing of data or if important data is in an external database, you are likely to need data links.

- ▶ How do you access the data?

If access to external data is through defined APIs, URLs, or web services, or if the protocol for information transfer is not open, you are likely to need data links.

- ▶ What is the nature of the data required in customer interactions?

You are likely to need data links if interactions with customers require information that:

- Is very customer-specific and not “global.”
- Ages quickly, so that agents have to access data in real time.
- Is used frequently, so agents have to access the information for each customer interaction.

How Do Data Adapters Work?

Data links are of two types:

1. Access links, which connect to the external source and fetch data. Access links are discussed in detail in [“Data Access Links” on page 18](#).
2. Usage links, which use the fetched data either in displays within the application, or as input criteria for making decisions about processing information within the application. Usage links are explained in [“Data Usage Links” on page 23](#).

A working data-link connection typically involves:

- ▶ Creating a data access link to fetch data from the external source.
- ▶ Creating data usage links, which are made available to users to process the data extracted from the external source. Multiple usage links can be grouped to create a single display. Usage link grouping is discussed in detail in [“Data Usage Link Groups” on page 29](#).

Where and How Can You Use Data Adapters?

Once data links are created, they can be used in the following modules.

Workflows

- ▶ Data retrieved from usage links can be used in “IF” conditions to make routing decisions or to update attributes of business objects.

Knowledge Base

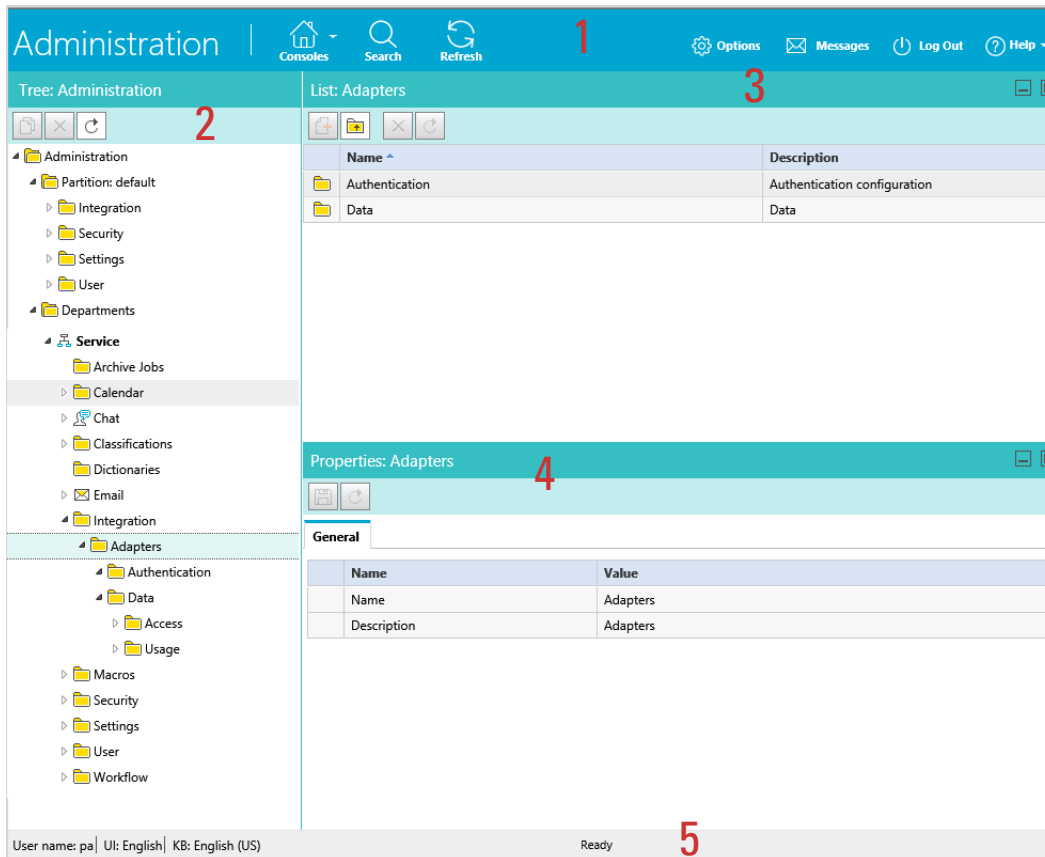
- ▶ Usage links can be embedded in Knowledge Base articles. Once a working link is embedded in an article, external information is retrieved and included in the article body when the article is used by agents, or by the workflow engine for auto-replies.

Agent Console

- ▶ Usage links that can be executed by the agent are displayed in the Links section in the Agent Console, Information pane. Agents can add the output of usage links to responses by clicking the **Add to Reply** button.

Elements of the User Interface

The Administration Console user interface can be divided into five functional areas.



Elements of the Administration Console user interface

- 1. Console toolbar:** The main toolbar of the console appears at the top of the screen. Each button on this toolbar allows you to perform a specific function. Some of these are: navigate to other consoles, send and receive internal messages, log out of the system, and access the online help for the Administration Console.
- 2. Tree pane:** The Tree pane lists all the business objects in the application, allowing you to select the node (folder) that you wish to work in. When you select a folder, its first-level contents are displayed in the List pane.

To expand all first and second level nodes with a single click, press SHIFT and click the plus [+] button next to the topmost node. The contents of all first and second level nodes are displayed in the Tree pane.
- 3. List pane:** The List pane displays first-level contents of the folder selected in the Tree pane. You can view the name, description, date of creation, etc., of the displayed items. In this pane, you can create items or select existing ones to modify or delete them.
- 4. Properties pane:** The Properties pane displays the contents of the business object selected in the List pane. In this pane, you can edit the properties of the selected item.
- 5. Status bar:** The status bar is present at the bottom of every screen. It displays the following information:
 - The user name with which the user has logged in the system.

- The language currently in use.
- The status of the system (Loading, Ready, etcetera).

2 Authentication for Data Adapters


- ▶ [Configuring Basic Authentication](#)
- ▶ [Configuring OAuth 2.0 Authentication](#)
- ▶ [Deleting Authentication Configuration](#)

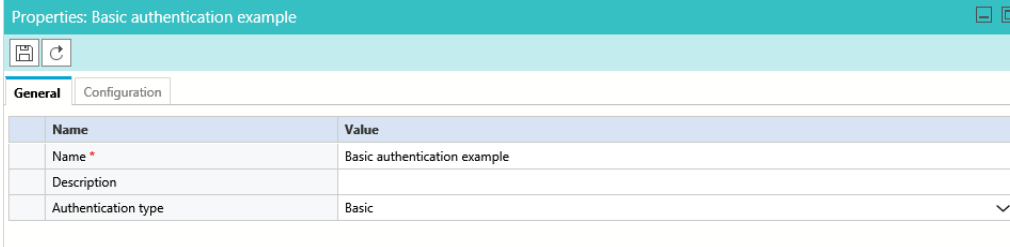
While some web services have publicly available APIs and links that data adapters can use, there are plenty of services out there that require security clearance. Thus, it may be necessary to configure data adapters to use these services with the required authentication details. There are two options for the type of authentication configurations: Basic and OAuth 2.0. Create your authentication configurations before configuring the access links.

Configuring Basic Authentication

Basic authentication uses standard fields in the HTTP header, removing the need for handshakes. Data adapters authenticate to basic authentication enabled web services with a username and password combination - the username and password are joined and passed in the Authorization HTTP header.

To create a basic data adapter authentication configuration:

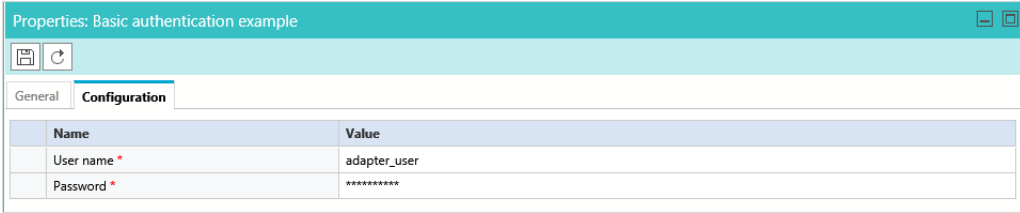
1. In the Tree pane, browse to **Administration > Department > Department Name > Integration > Adapters > Authentication**.
2. In the List Pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details:
 - **Name:** The name for the configuration.
 - **Description:** A brief description of the configuration.
 - **Authentication type:** Select **Basic**.



Name	Value
Name *	Basic authentication example
Description	
Authentication type	Basic


Provide name and select authentication type

4. In the Properties pane, under the Configuration tab, provide the following details:
 - **User name:** The user name for the account the data adapter will use for authentication.
 - **Password:** The password for the account the data adapter will use for authentication.



Name	Value
User name *	adapter_user
Password *	*****

Provide user name and password


- Click the **Save**  button to save your configuration. This configuration can now be used when creating data links. For more information, see. [“Data Access Links” on page 18.](#)

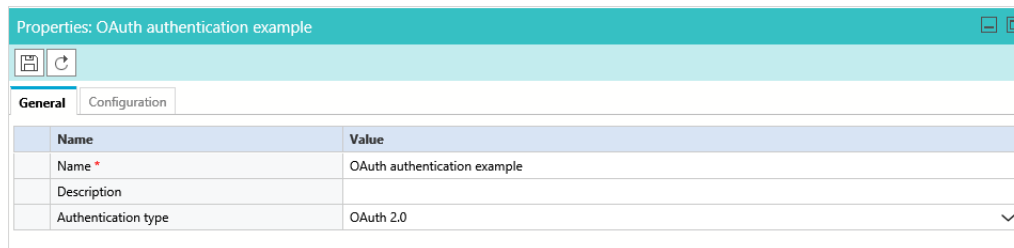
Configuring OAuth 2.0 Authentication

OAuth 2.0 configuration is required for web services that need authorization to allow its resources to be accessed by a third-party client. OAuth generated **Access Token** is passed in the web services Authorization HTTP header.

Keep the OAuth 2.0 configuration up-to-date in the application as it changes based on the web services provider access and authorization policies.

To create an OAuth 2.0 data adapter authentication configuration:



- In the Tree pane, browse to **Administration > Department > Department Name > Integration > Adapters > Authentication.**
- In the List Pane toolbar, click the **New**  button.
- In the Properties pane, on the General tab, provide the following details:
 - Name:** The name for the configuration.
 - Description:** A brief description of the configuration.
 - Authentication type:** Select **OAuth 2.0.**




The screenshot shows a window titled "Properties: OAuth authentication example". It has a toolbar with a Save icon and a Refresh icon. Below the toolbar, there are two tabs: "General" (selected) and "Configuration". Under the "General" tab, there is a table with the following data:

Name	Value
Name *	OAuth authentication example
Description	
Authentication type	OAuth 2.0


Provide name and select authentication type

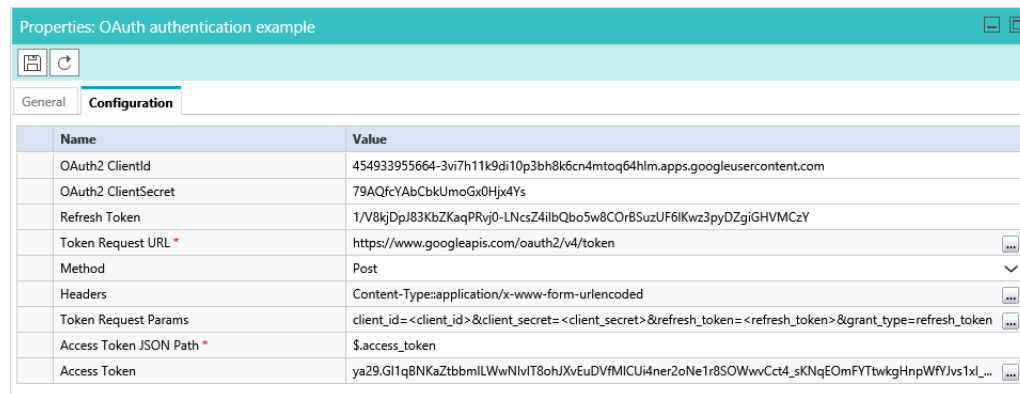
- In the Properties pane, under the Configuration tab, provide the following details:
 - OAuth2 ClientId:** The unique string representing the registration information provided by the service provider.
 - OAuth2 ClientSecret:** The unique string provided by the service provider that acts as a means of authorizing a client that is requesting an access token.
 - Refresh Token:** Credentials used to obtain new access tokens when the current access token expires.
 - Token Request URL:** Click the **Assistance**  button. In the window that appears, provide the access token request URL and click **OK** to close the window. This field is required.
 - Method:** Select the method in which the access token is retrieved. Select either **Post** or **Get**. The method selected depends on what the client authentication server supports.
 - Headers:** Click the **Assistance**  button. In the window that appears, provide any necessary additional values to include in the response header by entering a **Name** and **Value** for the field. When you have entered all the necessary header values, click **OK** to close the window.

- **Token Request Params:** Click the **Assistance**  button. In the window that appears, provide the parameters for the token request body. Format the parameters string property with variables and values to ensure that correct information is sent in the request.


For example:

```
client_id=<client_id>&client_secret=<client_secret>&refresh_token=<refresh_token>&grant_type=refresh_token
```

- **Access Token JSON Path:** The JSON query path of an attribute in the returned JSON response. For example, \$.access_token.
- **Access Token:** If you wish to provide a current access token, click the **Assistance**  button and enter the string in the field. Click **OK** to close the window. Leave this field blank if you do not have an Access Token. New token will be requested by the application using the provided details.




Provide configuration details

5. Click the **Save**  button to save your configuration. This configuration can now be used when creating data links. For more information, see. “[Data Access Links](#)” on page 18.

Deleting Authentication Configuration

Authentication configuration cannot be deleted if it is used in a data access link.

To delete an authentication configuration:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters Authentication**.
2. In the List pane, select an authentication configuration.
3. In the List pane toolbar, click the **Delete**  button.
4. A message appears asking to confirm the deletion. Click **Yes** to delete the authentication configuration.

Data Access Links

- ▶ [About Data Access Links](#)
- ▶ [Creating Web Service - RESTful Links](#)
- ▶ [Testing Access Links](#)
- ▶ [Deleting Access Links](#)

About Data Access Links

Access links connect to the external source and fetch data.

The following access link type can be created:


- ▶ **Web service - RESTful link:** A web service link provides the mechanism to connect to a web service using representation state transfer (REST) operations. With these type of data access links, the web service APIs of third-party applications can be used to perform necessary functions, instead of developing custom applications to perform the same actions. To configure a RESTful link, you need the API request URL (HTTP/HTTPS) with the desired method (Get, Post, Put, Delete), along with any necessary authentication details. If necessary, a header and body can be provided as well.

Working on access links involves:

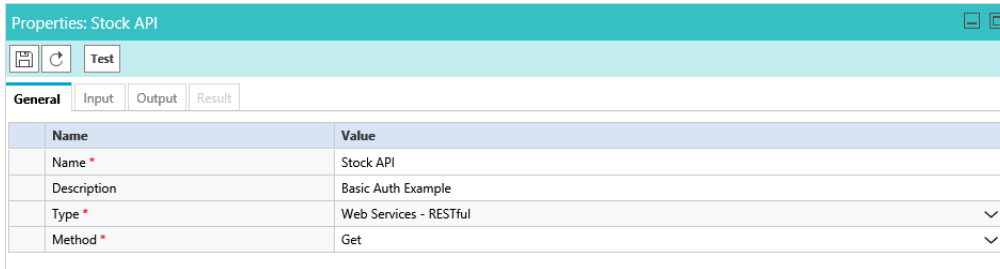
- ▶ **Configuring authentication details:** If the data links you are creating require authentication, you can configure the authentication format and details. For more information, see [“Authentication for Data Adapters” on page 14](#).
- ▶ **Creating access links:** Creating access links is the first step in creating data adapters. Access links extract the data from the source.
- ▶ **Testing access links:** After creating the access links you can test them to ensure that they are working properly.

Creating Web Service - RESTful Links

To create a web service link:

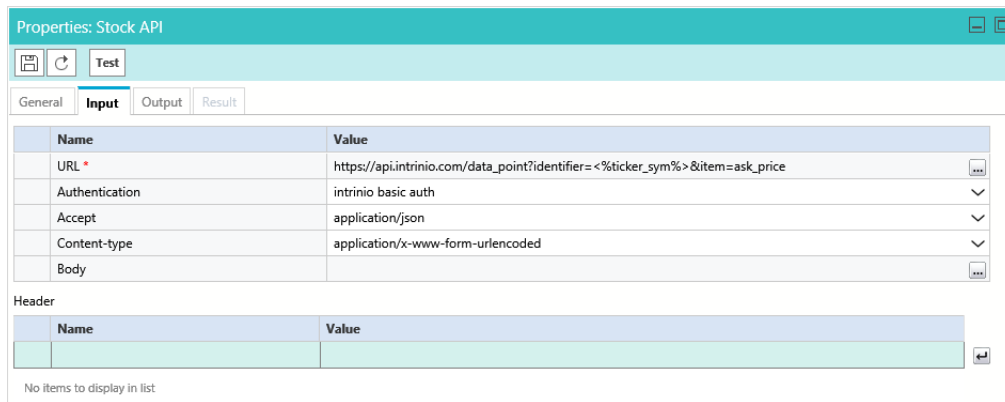
1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Access > Links**.
2. In the List pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details.
 - **Name:** Type the name of the web service link.
 - **Description:** Type a brief description.
 - **Type:** The value in the field is set to **Web Service - RESTful link** and cannot be changed.
 - **Method:** Select the method for the request. The options available are:
 - **Get**
 - **Post**
 - **Put**

- **Delete**



Set the general properties of the access link

- In the Properties pane, on the Input tab, provide the following details.
 - **URL:** Provide the request URL.
 - **Authentication type:** If you have created an authentication configuration for this data link, select the appropriate configuration from the dropdown list. For more information, see [“Authentication for Data Adapters” on page 14](#). If authentication is not required, select **None**.
 - **Accept:** Select the format you expect the output of the data link to use: **application/json** or **application/xml**.
 - **Content-type:** Select the format of the content that web services link expect as an input Options are: **application/json**, **application/xml**, or **application/x-www-form-urlencoded**.
 - **Body:** Provide the body for the response.
 - **Header:** Provide the name and value for any additional response header fields.



Set the input properties

- In the Properties pane, on the Output tab, provide the following details.
 - **Extract Or Filter:** Select **Extract** to fetch the attribute or an object from the original web services response. Select **Filter** to filter an attribute or object from the above extracted object. Extraction and filters work based on the XPATH and JSON query.
 - **PATH:** Provide the path for the response. XPATH query when expected output is in XML format. Or enter JSON query when expected output is in JSON format.

Example for JSON Output:

```
{
```

```

    "firstName": "John",
    "lastName" : "Bell",
    "age" : 26,
    "address" : {
    "streetAddress": " 1252 Borregas Avenue ",
    "city": " Sunnyvale ",
    "postalCode" : " 94089 " }
  }

```

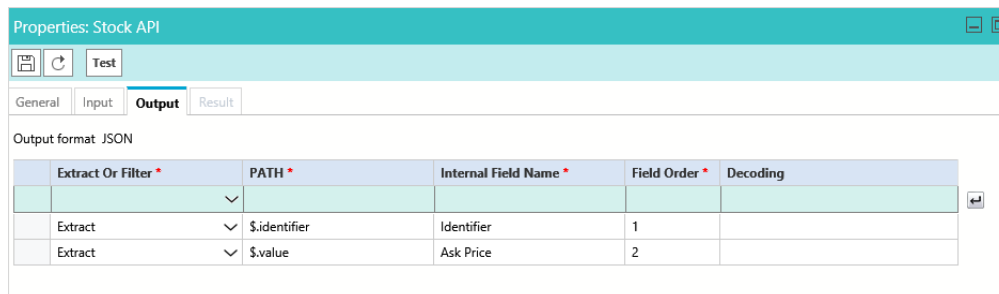
JSON Query to fetch fist name from the above output:

Extract or Filter : Extact

PATH : \$.firstName

- **Internal Field Name:** Provide the response field name.
- **Field Order:** Provide the response field order.
- **Decoding:** Provide the decoding format if necessary. The data extracted can be decoded to map the output values to user defined strings. For example, if the values returned are **1** and **0**, then they can be mapped to **Yes** and **No** respectively by entering the following string: 0=No,1=Yes.

Click the **Return** button or press **Enter** on the keyboard to add the output path.



Set the output properties

6. Click the **Save**  button.

Testing Access Links

After creating the links, you can test them to see if they are created properly.

To test an access link:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Access > Links**.
2. In the List pane, select the HTML link you want to test.
3. In the Properties pane toolbar, click the **Test** button.
4. In the Test Data Access Link window that appears, enter the values for the input parameters of the link.



Important: The Test Data Access Link window appears only if any input parameter needs to be provided.

The Result pane is enabled and here you can view the results. If the access link is not configured properly, an error message is displayed.


For some sample HTML links, see [“Example One – Get Weather Information for a City”](#) on page 34.

Deleting Access Links



Important: If an access link is used in a usage link, it cannot be deleted. To be able to delete it, first remove it from the usage link.

To delete an access link:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Access > Links**.
2. In the List pane, select an access link.
3. In the List pane toolbar, click the **Delete**  button.
4. A message appears asking to confirm the deletion. Click **Yes** to delete the usage link group.



Data Usage Links

- ▶ [About Data Usage Links](#)
- ▶ [Creating Usage Links](#)
- ▶ [Creating Macros](#)
- ▶ [Configuring Display of Results](#)
- ▶ [Assigning Permissions for Usage Links](#)
- ▶ [Testing Usage Links](#)
- ▶ [Deleting Usage Links](#)


About Data Usage Links

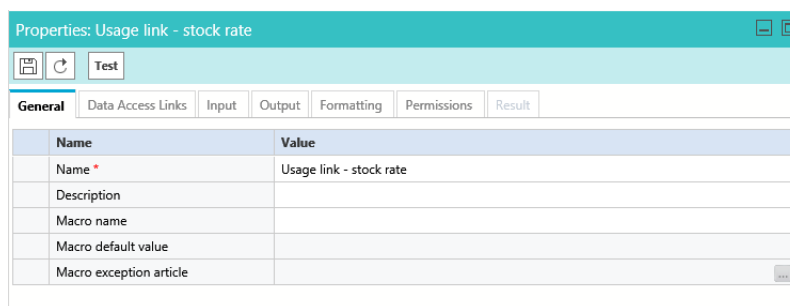
After you have created access links, you can define the display format of the data that is fetched by the access link. This is done using usage links. Similar to Knowledge Base articles, usage links support macros, making them simple to use in workflows, and by agents and KB authors.

Creating Usage Links

To be able to create usage links, you need to first create the data links. For details, see [“Data Access Links” on page 18](#).

To create a usage link:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details.
 - **Name:** Type the name of the usage link.
 - **Description:** Type a brief description.



Properties: Usage link - stock rate

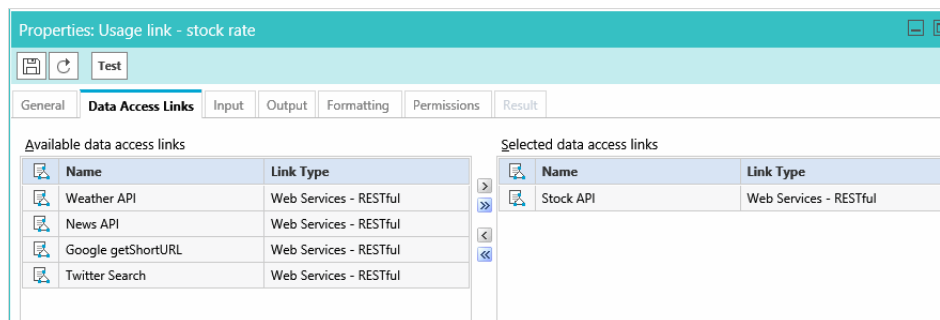
Test

General | Data Access Links | Input | Output | Formatting | Permissions | Result

Name	Value
Name *	Usage link - stock rate
Description	
Macro name	
Macro default value	
Macro exception article	

Set the general properties

4. In the Properties pane, on the Data Access Links tab, select the data access links.







Properties: Usage link - stock rate


Test

General | **Data Access Links** | Input | Output | Formatting | Permissions | Result

Available data access links

Name	Link Type
 Weather API	Web Services - RESTful
 News API	Web Services - RESTful
 Google.getShortURL	Web Services - RESTful
 Twitter Search	Web Services - RESTful

Selected data access links

Name	Link Type
 Stock API	Web Services - RESTful

Select the data access links

- In the Properties pane, the Input tab shows all the input parameters configured for the data access links selected for the usage link. Here, you can pre-determine values for some or all available parameters. If you are planning to create a macro for the usage link, make sure that you provide the parameter values.

You can create different usage links from the same access link, and just change the value of the input parameters here, to get different answers.

Data Access Link	Parameter Name	Parameter Value
Stock API	company	

Set the input properties

- In the Properties pane, on the Output tab, provide the following details.
 - Data Access Link:** From the dropdown list, select the data access link.
 - Field Name:** From the dropdown list, select the field name.
 - Display Name:** Type the display name for the field in which the data is to be extracted.
 - Field Width:** Specify the width of the field.
 - Hyperlink:** Set the hyperlink.

Data Access Link *	Field Name *	Display Name	Field Width	Hyperlink
Stock API	Identifier	Identifier	100000	
Stock API	Ask Price	Price	100000	

Set the output properties

- Click the **Save**  button.

After creating the usage links, create macros for the usage links ([page 25](#)), configure the display of results for the Agent Console ([page 26](#)), assign permissions to users so that they can access the usage links ([page 27](#)), and test the usage links ([page 28](#)).

Creating Macros

Usage links support macros, making them simple to use in workflows, and by agents and KB authors.




Important: Macros can be configured only for usage links that do not require any input parameters.

To create a macro:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane, select a usage link.
3. In the Properties pane, on the General tab, provide the following details.
 - **Macro name:** Type a name for the macro.



Important: A macro name cannot contain spaces, or any of the following characters: < ` , . ? : ; & " ' !

- **Macro default value:** Type the default value of the macro. When the macro is expanded, and no content is found, the default content of the macro is used. This content should be adequate enough to represent the original content.
 - **Macro exception article:** In the field, click the **Assistance** button. The Select Article window appears. In the window, select the exception article and click the **OK** button. If an error occurs while expanding the macro, the exception article is used. It ensures that if the macro does not expand, the customer is shown some alternate text, and not an error message.
4. Click the **Save**  button.

Configuring Display of Results

After you have created the usage link, you can configure how the results should appear in the Agent Console.

To configure the display of results:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane toolbar, select a usage link.
3. In the Properties pane, on the Formatting tab, provide the following details.
 - **Header:** Specify a header for the results.
 - **Footer:** Specify a footer for the results.
 - **Include column headers in response:** Use this option to add the header and footer information in the Reply pane when the agent adds the results in the reply. By default it is disabled. Select **Yes** to enable it.
 - **Display in new window:** This field is not in use.
 - **Title:** This field is not in use.
 - **New window - Left:** This field is not in use.
 - **New window - Top:** This field is not in use.
 - **New window - Width:** This field is not in use.

- **New window - Height:** This field is not in use.

Name	Value
Header	Today's rates
Footer	
Include column headers in response	Yes
Display in new window	No
Title	
New window - Left *	0
New window - Top *	0
New window - Width *	0
New window - Height *	0


Set the formatting

4. Click the **Save**  button.

Assigning Permissions for Usage Links

After creating data usage links, the next most important step is to give permissions to users to access the data usage links. All users (that includes administrators, authors, and agents) who need to use the data usage link or the macro of the link, must be given the Execute permission on the link. The user who creates the data usage link does not get the execute and delete permissions automatically.

To assign permissions:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane, select the usage link on which you want to give permissions.
3. In the Properties pane, on the Permissions tab, assign the following permissions to users and user groups:
 - Own
 - View
 - Edit
 - Delete
 - Execute: Only users with execute permission can use usage links. You must give this permission to all users who need access to the usage link.
4. Click the **Save**  button.

Testing Usage Links

After creating the usage links you can test them to see if they are created properly. It is highly recommended that you test your links after creating them.

To test the usage link:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane, select the usage link you want to test.
3. In the Properties pane toolbar, click the **Test data usage link** button.

The Test Data Usage Link window appears, where you enter the values for the input parameters of the link. The Result pane is enabled and here you can view the results.



Important: The Test Data Usage Link window appears only if any input parameter needs to be provided.


Deleting Usage Links

To be able to delete a usage link, you need to have delete permissions on it.



Important: If a usage link is used in a usage link group, it cannot be deleted. To be able to delete it, first remove it from the usage link group.


To delete a usage link:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Links**.
2. In the List pane, select a usage link.
3. In the List pane toolbar, click the **Delete**  button.



Important: The Delete button is enabled only if you have delete permission on the usage link.

4. A message appears asking to confirm the deletion. Click **Yes** to delete the usage link.



Data Usage Link Groups

- ▶ [Creating Usage Link Groups](#)
- ▶ [Configuring the Display of Results](#)
- ▶ [Assigning Permissions for Usage Link Groups](#)
- ▶ [Deleting Usage Link Groups](#)


This chapter describes procedures to help you configure and manage usage link groups.

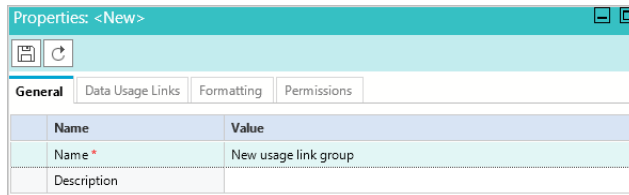
About Usage Link Groups

A data usage link group is a combination of two or more data usage links. To be able to create usage link groups, you need to first create the usage links. For details, see [“Data Usage Links” on page 23](#).

Creating Usage Link Groups

To create a link group:

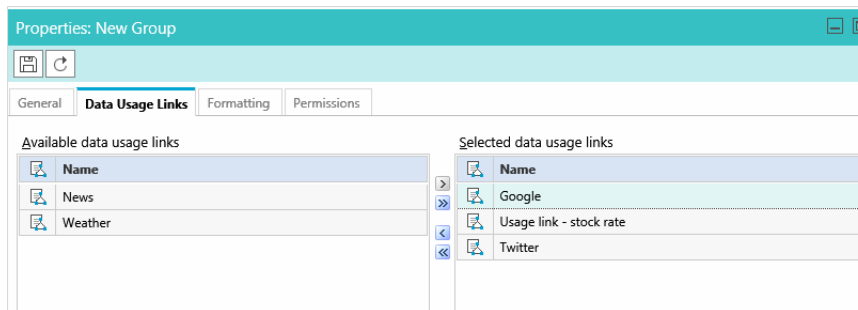
1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Link Groups**.
2. In the List pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details.
 - **Name:** Type the name of the usage link group.
 - **Description:** Type a brief description.



Name	Value
Name *	New usage link group
Description	

Set the general properties

4. In the Properties pane, on Data Usage Links tab, select the data usage links.



Available data usage links	Selected data usage links
<input type="checkbox"/> Name	<input checked="" type="checkbox"/> Name
<input checked="" type="checkbox"/> News	<input checked="" type="checkbox"/> Google
<input type="checkbox"/> Weather	<input checked="" type="checkbox"/> Usage link - stock rate
	<input checked="" type="checkbox"/> Twitter

Select the data usage links

5. Click the **Save**  button.

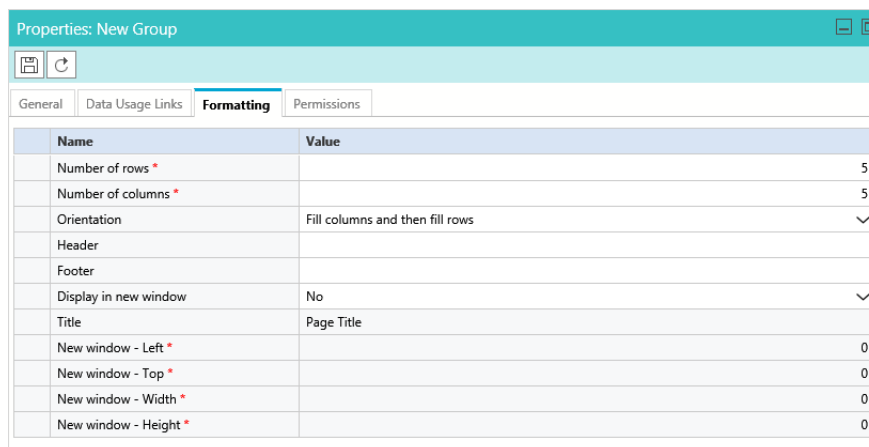
After creating the usage link groups, configure the display of results for the Agent Console ([page 31](#)) and assign permissions to users so that they can access the usage link group ([page 32](#)).

Configuring the Display of Results

After you have created the usage link group, you can configure how the results should appear in the Agent Console.

To configure the display of results:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Link Groups**.
2. In the List pane toolbar, select a usage link group.
3. In the Properties pane, on the Formatting tab, provide the following details.
 - **Number of rows:** Specify the number of rows to be displayed in the results page.
 - **Number of columns:** Specify the number of columns to be displayed in the results page.
 - **Orientation:** From the dropdown list, select the orientation. The options available are:
 - **Fill rows and then fill columns**
 - **Fill columns and then fill rows**
 - **Header:** Specify a header for the results.
 - **Footer:** Specify a footer for the results.
 - **Display in new window:** This field is not in use.
 - **Title:** This field is not in use.
 - **New window - Left:** This field is not in use.
 - **New window - Top:** This field is not in use.
 - **New window - Width:** This field is not in use.
 - **New window - Height:** This field is not in use.



Name	Value
Number of rows *	5
Number of columns *	5
Orientation	Fill columns and then fill rows
Header	
Footer	
Display in new window	No
Title	Page Title
New window - Left *	0
New window - Top *	0
New window - Width *	0
New window - Height *	0


Set the formatting

4. Click the **Save**  button.

Assigning Permissions for Usage Link Groups

After creating data usage link groups, the next most important step is to give permissions to users to access the data usage link groups. All users (that includes administrators, authors, and agents) who need to use the data usage link groups must be given the Execute permission on the link. The user who creates the data usage link group does not get the execute and delete permissions automatically.


To assign permissions:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Link Groups**.
2. In the List pane, select the usage link group on which you want to give permissions.
3. In the Properties pane, on the Permissions tab, assign the following permissions to users and user groups:
 - Own
 - View
 - Edit
 - Delete
 - Execute: Only users with execute permission can use usage link groups. You must give this permission to all users who need access to the usage link group.
4. Click the **Save**  button.

Deleting Usage Link Groups

To be able to delete a usage link group, you need to have delete permissions on it. For information on how to give permissions, see [“Assigning Permissions for Usage Link Groups” on page 32](#).

To delete a usage link group:

1. In the Tree pane, browse to **Administration > Department > *Department_Name* > Integration > Adapters > Data > Usage > Link Groups**.
2. In the List pane, select a usage link group.
3. In the List pane toolbar, click the **Delete**  button.



Important: The Delete button is enabled only if you have delete permission on the usage link group.

A message appears asking to confirm the deletion. Click **Yes** to delete the usage link group.



Sample Data Access Links

- ▶ [Example One – Get Weather Information for a City](#)
- ▶ [Example Two – Extract Stock Information From a Website](#)
- ▶ [Example Three – Shorten URLs Using Google API](#)

Example One – Get Weather Information for a City

In this example, we describe how to create Web Services- RESTful link to look up weather using the weather report API available from www.openweathermap.com. This example does not use any authentication.



Note: Users creating this link should be familiar with REST Web services and JSON.

To create a link:

1. Before creating the link, sign-up at <http://www.openweathermap.com> and get the API key to be used for the data adapter.
2. In the Properties pane, on the General tab, provide the following details.
 - **Name:** Type a name.
 - **Type:** Type is set to **Web Services - RESTful** and cannot be changed.
 - **Method:** Set the method as **Post**.
3. In the Properties pane, go to the Input tab and provide the following details.
 - **URL:** Type the URL
`http://api.openweathermap.org/data/2.5/weather?q=<%city%>&APPID=c854f43c700fa17b1729367c9e0648e9`
`<%city%>` sets up the dynamic variable that needs a value every time this access link is executed.
Replace the value of `APPID` in the URL with the API key value generated at <http://www.openweathermap.com>
 - **Authentication:** Set as **None**.
 - **Accept:** Set as **application/json**.
 - **Content-type:** Set as **application/x-www-form-urlencoded**.


Name	Value
URL *	http://api.openweathermap.org/data/2.5/weather?q=<%city%>&APPID=c854f43c700fa17b1729367c9e0648e9
Authentication	None
Accept	application/json
Content-type	application/x-www-form-urlencoded
Body	

Name	Value
------	-------

No items to display in list

Sample link for getting weather information

4. In the Properties pane, go to the Output tab and provide the following details.
 - **Extract Or Filter:** Select **Extract**.
 - **PATH:** Set as **\$. weather[0]['description']**
 - **Internal Field Name:** Provide the name as **Weather**.

- **Field Order:** Set the value as **1**.
- 5. Click the **Save**  button.
- 6. Click the **Test** button. The Test Data Access Link window appears.
- 7. In the Test Data Access Link window, type the city name as *Sunnyvale*.
- 8. In the Result tab, you will see the weather information for Sunnyvale.

Example Two – Extract Stock Information From a Website

In this example, we describe how to create a data access link to look up asking price for stocks using the API from <https://intrinio.com>. This example uses basic authentication.

Configure Basic Authentication

To create basic authentication:

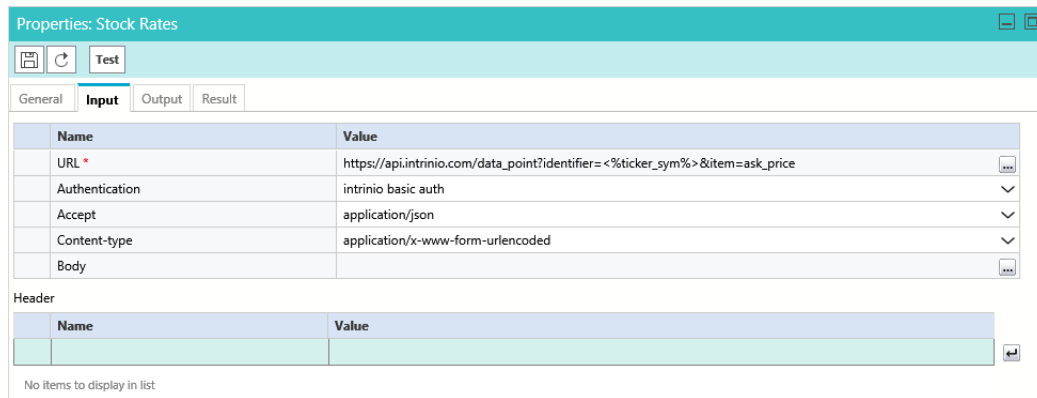
1. Sign-up at <https://intrinio.com> and get the API username and password to be used for the data adapter.
2. In the Administration Console, browse to **Administration > Department > Department Name > Integration > Adapters > Authentication**.
3. Configure Basic Authentication using the username and password generated from <https://intrinio.com>.

Create the Access Link

To create a link:

1. In the Properties pane, on the General tab, provide the following details.
 - **Name:** Type the name as *Stock rates*.
 - **Type:** Type is set to **Web Services - RESTful** and cannot be changed.
 - **Method:** Set the method as **Get**.
2. In the Properties pane, go to the Input tab and provide the following details.
 - **URL:** Type the URL
`https://api.intrinio.com/data_point?identifier=<ticker_sym%>&item=ask_price`
The `<ticker_sym%>` sets up the dynamic variable that needs a value every time this access link is executed.
 - **Authentication:** Select the basic authentication created for <https://intrinio.com>.
 - **Accept:** Set as **application/json**.

- **Content-type:** Set as **application/x-www-form-urlencoded**.



Sample link for getting stock rates

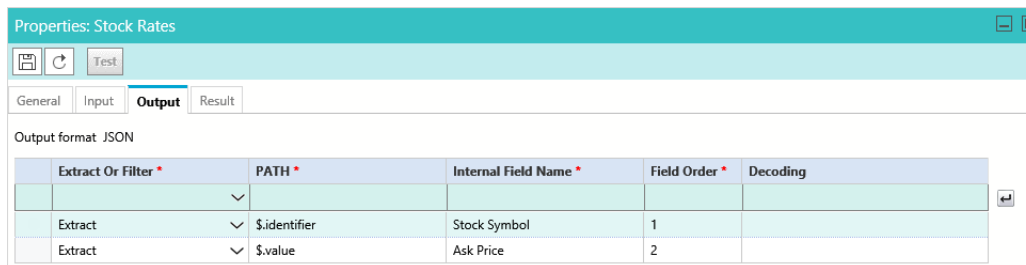
3. In the Properties pane, on the Output tab, provide the following details.

- **Extract Or Filter:** Select **Extract**
- **PATH:** Set as **\$.identifier**
- **Internal Field Name:** Provide the name as **Stock Symbol**
- **Field Order:** Set the value as **1**.


Click the **Return** button or press **Enter** on the keyboard to add the output path.

- **Extract Or Filter:** Select **Extract**
- **PATH:** Set as **\$.value**
- **Internal Field Name:** Provide the name as **Ask Price**
- **Field Order:** Set the value as **2**.

Click the **Return** button or press **Enter** on the keyboard to add the output path.



Configure the output

4. Click the **Save**  button.
5. Click the **Test** button. The Test Data Access Link window appears.
6. In the Test Data Access Link window, type the ticker_sym as **IBM**.
7. In the Result tab you will see the stock price extracted from the website.

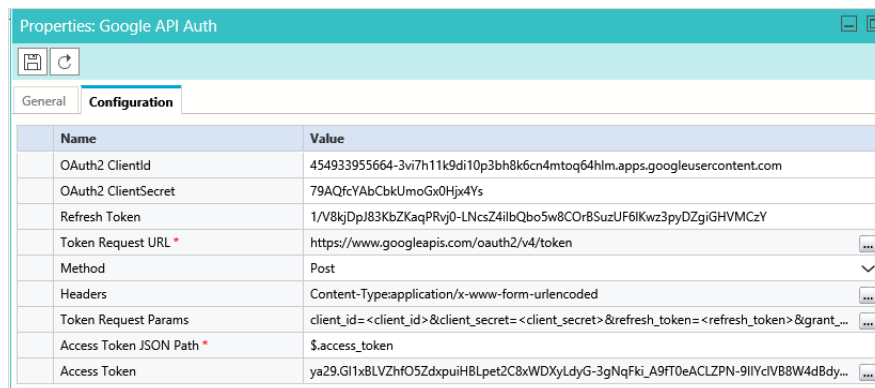
Example Three – Shorten URLs Using Google API

In this example, we describe how to create a data access link to create short URLs using the Google API. This example uses OAuth authentication.

Configure OAuth 2.0 Authentication

To configure OAuth 2.0 Authentication:

1. Sign-up and enable OAuth2.0 for Short URL API at <https://developers.google.com/apis-explorer/#p/> From the Google API Manager, note down the client ID, Secret, and refresh token to be used for the data adapter.
2. In the Administration Console, browse to **Administration > Department > Department Name > Integration > Adapters > Authentication.**
3. Configure OAuth 2.0 Authentication using the client ID, Secret, and refresh token generated from <https://developers.google.com>. For the rest of the fields, provide following details:
 - **Token Request URL:** Set as `https://www.googleapis.com/oauth2/v4/token`
 - **Method:** Set as **Post**
 - **Headers:** Set as `Content-Type, application/x-www-form-urlencoded`
 - **Token Request Params:** Set as `client_id=<client_id>&client_secret=<client_secret>&refresh_token=<refresh_token>&grant_type=refresh_token`
 - **Access Token JSON Path:** Set as `$.access_token`
 - **Access Token:** Leave this field blank.



Configure OAuth authentication

4. Click the **Save**  button.

Create the Access Link


To create a link:

1. In the Properties pane, on the General tab, provide the following details.

- **Name:** Type the name as *Short URLs*.
 - **Type:** Type is set to **Web Services - RESTful** and cannot be changed.
 - **Method:** Set the method as **Post**.
2. In the Properties pane, go to the Input tab and provide the following details.
- **URL:** Type the URL `https://www.googleapis.com/urlshortener/v1/url`
 - **Authentication:** Select the OAuth authentication created for Short URL API ([page 37](#))
 - **Accept:** Set as **application/json**.
 - **Content-type:** Set as **application/json**
 - **Body:** Set the body as `{"longUrl": "<%URL%>"}`
- <% URL%> sets up the dynamic variable that needs a value every time this access link is executed.



Sample link

3. In the Properties pane, go to the Out tab and provide the following details.
- **Extract Or Filter:** Select **Extract**
 - **PATH:** Set as **\$.id**
 - **Internal Field Name:** Provide the name as **Short URL**
 - **Field Order:** Set the value as **1**.
- Click the **Return** button or press **Enter** on the keyboard to add the output path.
4. Click the **Save**  button.
5. Click the **Test** button. The Test Data Access Link window appears.
6. In the Test Data Access Link window, type any URL.
7. In the Result tab you will show the short URL returned by the Google API.