



## **Enterprise Chat and Email Administrator's Guide to Data Adapters, Release 12.0(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

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*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.

## Related Documents

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The latest versions of all Cisco documentation can be found online at <https://www.cisco.com>

Subject	Link
Complete documentation for Enterprise Chat and Email, for both Cisco Unified Contact Center Enterprise (UCCE) and Cisco Packaged Contact Center Enterprise (PCCE)	<a href="https://www.cisco.com/c/en/us/support/customer-collaboration/enterprise-chat-email-12-0-1/model.html">https://www.cisco.com/c/en/us/support/customer-collaboration/enterprise-chat-email-12-0-1/model.html</a>

## Communications, Services, and Additional Information

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- ▶ To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
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## Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

## Field Alerts and Field Notices

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

## Documentation Feedback

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## Document Conventions

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This guide uses the following typographical conventions.

Convention	Indicates
<i>Italic</i>	Emphasis. Or the title of a published document.
<b>Bold</b>	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*

# 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.

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?

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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?

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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 16](#).
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?

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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

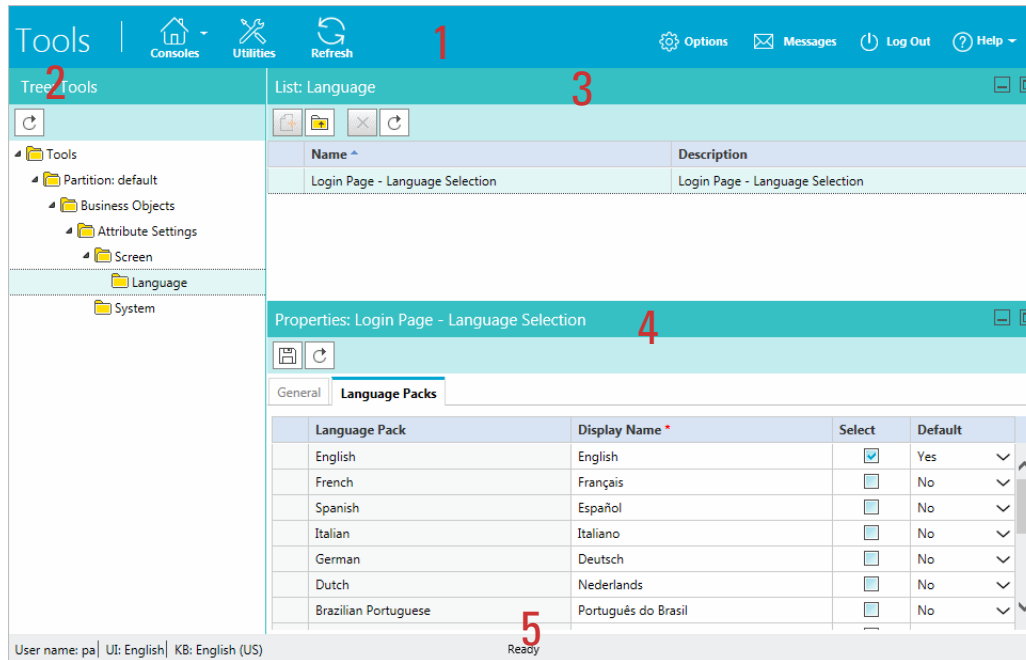
- ▶ Usage links can be embedded in Knowledge Base articles, like quick responses for chats. Once a working link is embedded in an article, external information is retrieved and included in the article body when the article is used by agents, or by the workflow engine for auto-acknowledgements.

## Advisor Desktop

- ▶ Usage links that can be executed by the agent are displayed in the Links section in the Agent Console. 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](#)

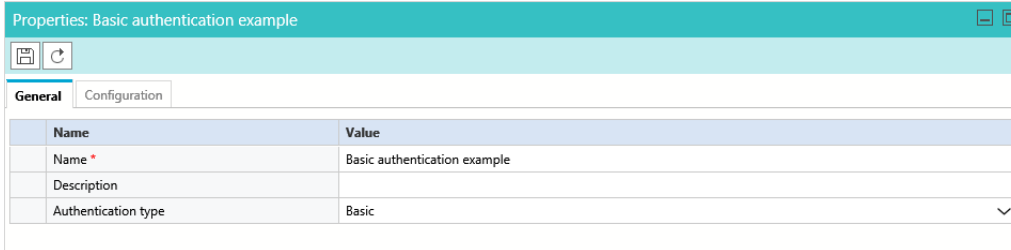
While some web services have publicly available APIs and links that data adapters can use, there are plenty of services out there that require security clearance. Thus, it may be necessary to configure data adapters to use these services with the required authentication details. There are two options 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:

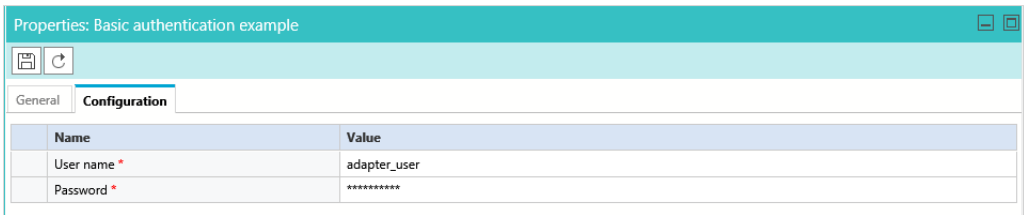
1. In the Tree pane, browse to **Administration > Department > Department Name > Integration > Adapters > Authentication**.
2. In the List Pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details:
  - **Name:** The name for the configuration.
  - **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 16.](#)

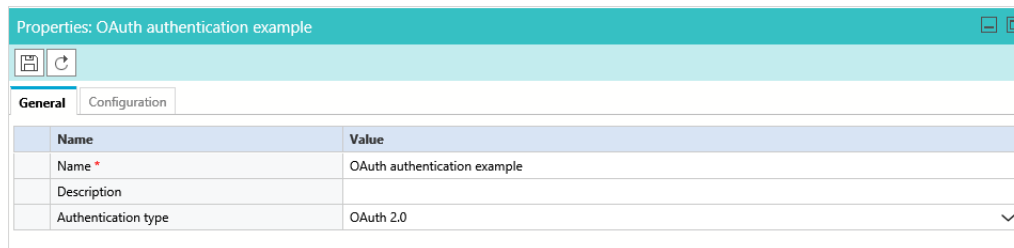
## Configuring OAuth 2.0 Authentication

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" with a "General" tab selected. Below the tab is a table with two columns: "Name" and "Value".

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


*Provide name and select authentication type*

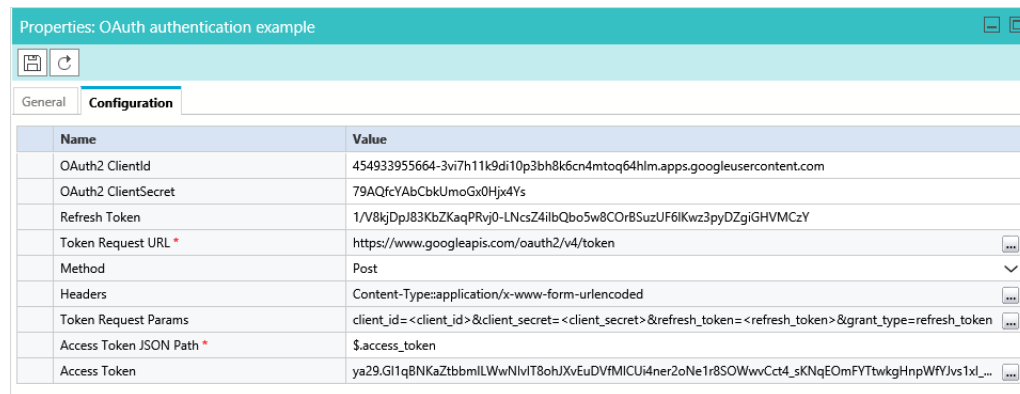
- In the Properties pane, under the Configuration tab, provide the following details:
  - OAuth2 ClientId:** The unique string representing the registration information provided by the service provider.
  - OAuth2 ClientSecret:** The unique string provided by the service provider that acts as a means 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 16.](#)

## 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](#)
- ▶ [Editing JDBC 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.
- ▶ **JDBC link:** The JDBC link can be used to connect to the Archive database to extract or to update data. No other database data link types are supported. The JDBC link type is only available in the application if the installation was upgraded from an installation of 11.6(1) on MSSQL Standard 2014. The application comes with the following links pre-configured:
  - Archived Activity Details by Case ID
  - Archived Case Details by Customer



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**Important:** You can only view, edit, or delete pre-existing JDBC access links. Creating new JDBC links is not permitted.

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Working on access links involves:

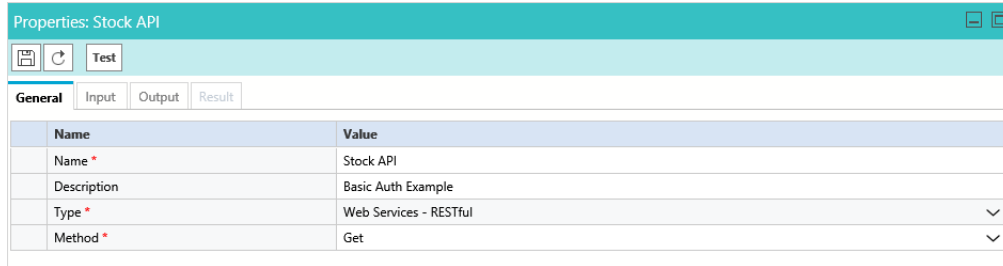
- ▶ **Configuring authentication details:** If the data links you are creating require authentication, you can configure the authentication format and details. For more information, see [“Authentication for Data Adapters”](#) on page 12.
- ▶ **Creating access links:** Creating access links is the first 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:**

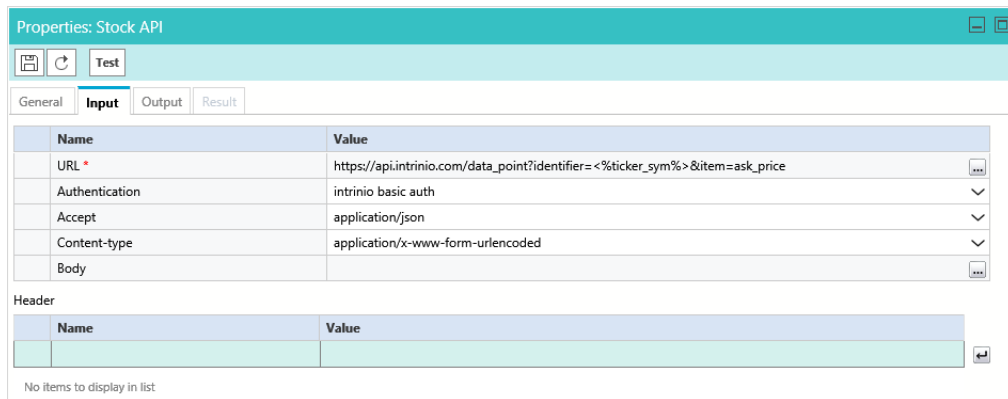
1. In the Tree pane, browse to **Administration > Department > *Department\_Name* > Integration > Adapters > Data > Access > Links**.
2. In the List pane toolbar, click the **New**  button.
3. In the Properties pane, on the General tab, provide the following details.
  - **Name:** Type the name of the 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 12](#). 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 : Extract

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.

Extract Or Filter *	PATH *	Internal Field Name *	Field Order *	Decoding
Extract	\$.identifier	Identifier	1	
Extract	\$.value	Ask Price	2	

*Set the output properties*

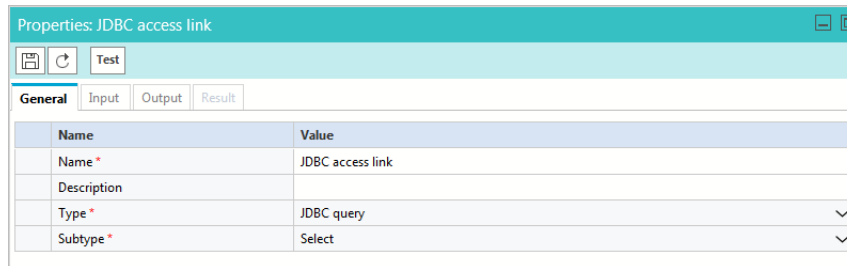
6. Click the **Save**  button.

# Editing JDBC Links

This data adapter uses SQL queries or stored procedures to update or extract data from a database. Queries to be executed can be generated at runtime using application specific input fields. The raw data fetched is in a Results Set format. This data adapter can access information residing in a JDBC-compliant data store.

## To edit a JDBC link:

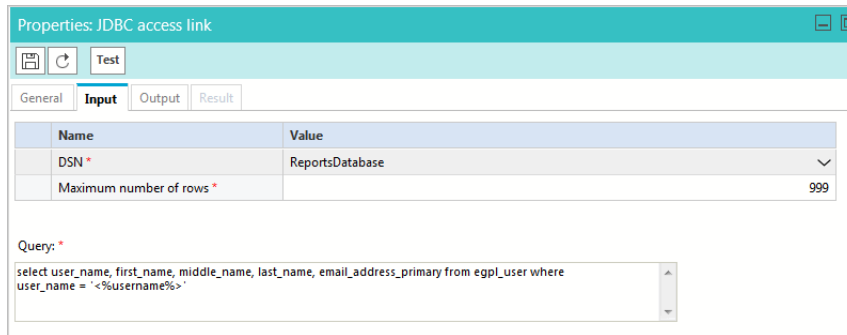
1. In the Tree pane, browse to **Administration > Department > *Department\_Name* > Integration > Adapters > Data > Access > Links**.
2. In the List pane toolbar, click one of the following query links:
  - Archived\_Activity\_Details\_By\_CaseID\_AL
  - Archived\_Case\_Details\_By\_Customer\_AL
3. In the Properties pane, on the General tab, you can edit the following details.
  - **Name:** Type the name for the JDBC query link.
  - **Description:** Type a brief description.
  - **Type:** This is set to **JDBC query**.
  - **Subtype:** Select is the subtype.



*Set the general properties*

4. In the Properties pane, on the Input tab, provide the following details.
  - **DSN:** The data source name (DSN), provides all the connection information (server name, port number, user name, password, driver) to successfully connect to the database. From the dropdown, select the DSN.
  - **Maximum number of rows:** Specify the maximum number of rows the query should extract.

- **Query:** You can edit the query text that is already provided. If you are accessing unicode data (for example, Japanese, Chinese, Western European etc), you must make sure that you use the N prefix in the queries. For example, `select * from Customer_Data where C_Name like N',D,è,µ'`



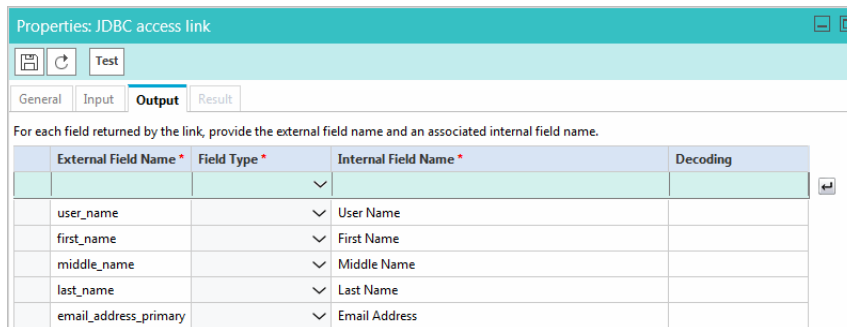
*Set the input properties*

5. In the Properties pane, on the Output tab, the following details have already been provided and can be edited.



**Important:** The Output tab is disabled for update type of JDBC queries.

- **External Field Name:** Type the exact names of the columns in the database table.
- **Field Type:** This field is disabled.
- **Internal Field Name:** Type the display name for the field in which the data is to be extracted.
- **Decoding:** 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.



*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 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 links, see [“Sample Data Access Links” on page 33](#).

## 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](#)
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- ▶ [Assigning Permissions for Usage Links](#)
- ▶ [Testing Usage Links](#)
- ▶ [Deleting Usage Links](#)


# About Data Usage Links

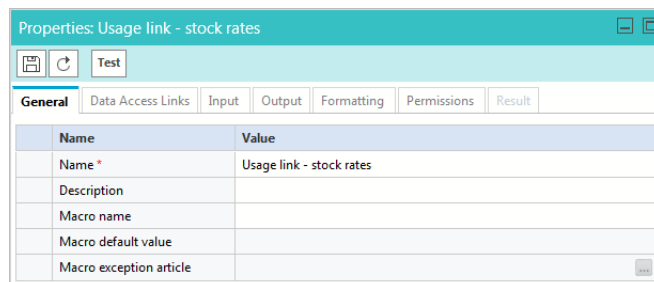
After you have created access links, you can define the display format of the data that is fetched by the access link. This is done using usage links. Similar to knowledge base articles, usage links support macros, making them simple to use in workflows, and by agents and KB authors.

## 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 16](#).

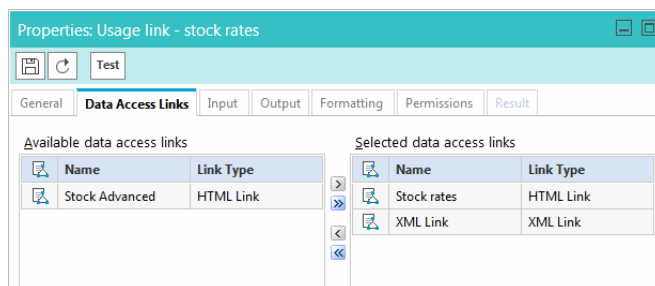
### To create a usage link:

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.



*Set the general properties*

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

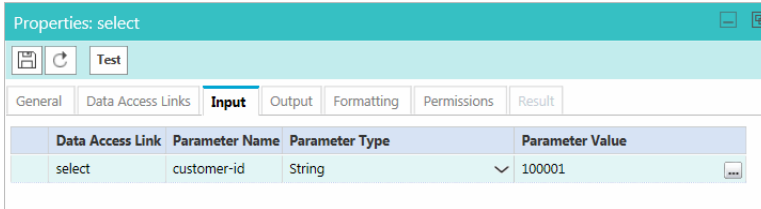


*Select the data access links*

5. 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.

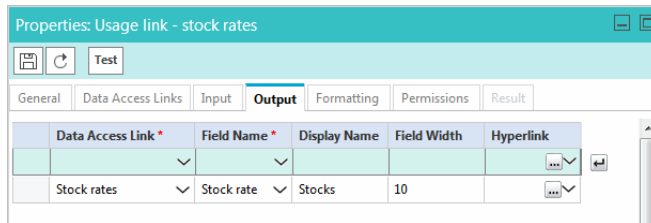


You can create different usage links from the same access link, and just change the value of the input parameters here, to get different answers.



*Set the input properties*

6. 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.



*Set the output properties*

7. 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 27](#)).

## 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.

Name	Value
Header	
Footer	
Include column headers in response	No

*Set the formatting*


4. Click the **Save**  button.

# Assigning Permissions for Usage Links

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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

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

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# Deleting Usage Links

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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.

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## 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 the delete permission on the usage link.

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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.

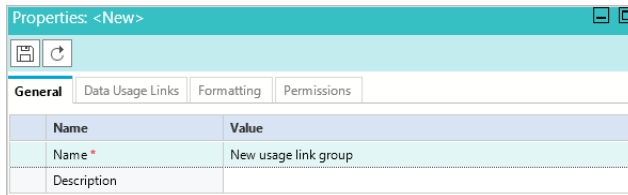
## About Usage Link Groups

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.

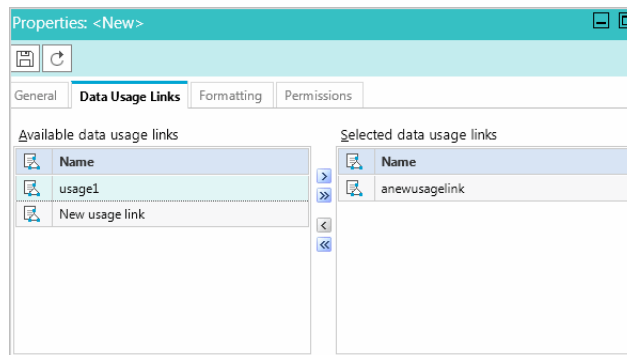


The screenshot shows a window titled "Properties: <New>". It has a toolbar with a save icon and a refresh icon. Below the toolbar are four tabs: "General", "Data Usage Links", "Formatting", and "Permissions". The "General" tab is active and contains a table with two columns: "Name" and "Value".

Name	Value
Name *	New usage link group
Description	

*Set the general properties*

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



The screenshot shows the same "Properties: <New>" window, but now the "Data Usage Links" tab is active. It is divided into two panes. The left pane, titled "Available data usage links", contains a list with three items: "usage1" and "New usage link". The right pane, titled "Selected data usage links", contains a list with one item: "anewusagelink". Navigation arrows are visible between the panes.

*Select the data usage links*

5. Click the **Save**  button.

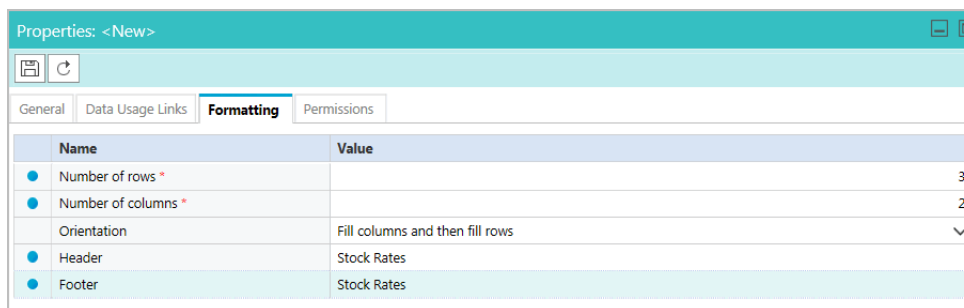
After creating the usage link groups, configure the display of results for the Agent Console ([page 31](#)) and assign permissions to users so that they can access the usage link group ([page 31](#)).

# 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.



The screenshot shows a 'Properties: <New>' window with a teal header. Below the header are icons for save and refresh. The window has four tabs: 'General', 'Data Usage Links', 'Formatting', and 'Permissions'. The 'Formatting' tab is active, displaying a table with the following configuration:

Name	Value
Number of rows *	3
Number of columns *	2
Orientation	Fill columns and then fill rows
Header	Stock Rates
Footer	Stock Rates

*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

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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 31.

### 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.

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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](http://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
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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

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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 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**.

Properties: Stock Rates

General **Input** Output Result

Name	Value
URL *	https://api.intrinio.com/data_point?identifier=<%ticker_sym%>&item=ask_price
Authentication	intrinio basic auth
Accept	application/json
Content-type	application/x-www-form-urlencoded
Body	

Header

Name	Value

No items to display in list

*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.


Properties: Stock Rates

General Input **Output** Result

Output format JSON

Extract Or Filter *	PATH *	Internal Field Name *	Field Order *	Decoding
Extract	\$.identifier	Stock Symbol	1	
Extract	\$.value	Ask Price	2	

*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.

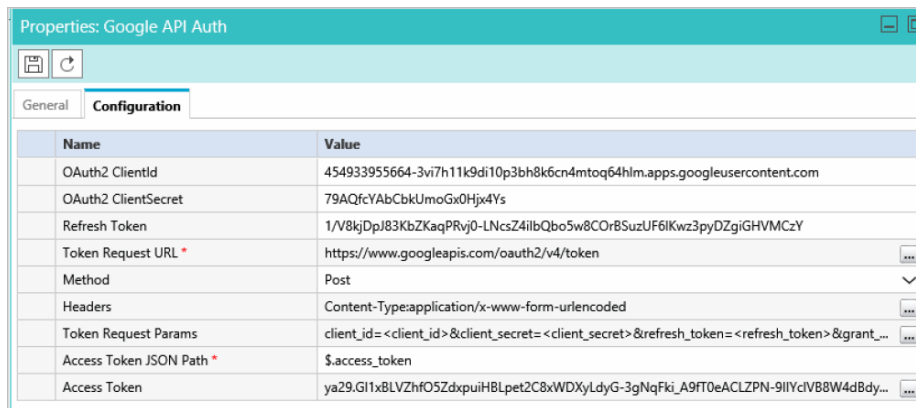
## Example Three – Shorten URLs Using Google API

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 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, client 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

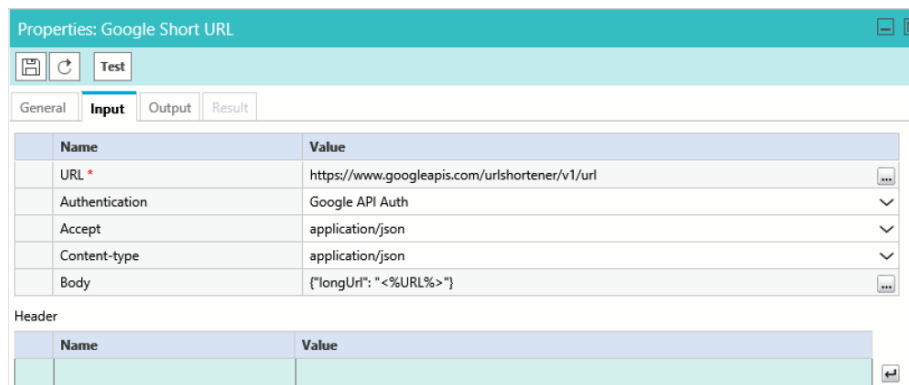
4. Click the **Save**  button.

## 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.