



Enterprise Chat and Email Administrator's Guide to Data Adapters, Release 12.5(1)

For Packaged Contact Center Enterprise

First Published: January, 2020

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Enterprise Chat and Email Administrator's Guide to Data Adapters: For Packaged Contact Center Enterprise. January 7, 2020

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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.

Related Documents

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)	https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/tsd-products-support-series-home.html

Communications, Services, and Additional Information

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Cisco Bug Search Tool

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

Documentation Feedback

To provide comments about this document, send an email message to the following address:
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We appreciate your comments.

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

1

Data Adapters Basics

- ▶ [Do You Need Data Adapters?](#)
- ▶ [How Do Data Adapters Work?](#)
- ▶ [Where and How Can You Use Data Adapters?](#)

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?

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 15](#).
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 20](#).

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 27](#).

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, 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.

Agent Console

- ▶ 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.

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 client's username and password are concatenated, and passed in the Authorization HTTP header.

To create a basic data adapter authentication configuration:

1. Select the desired department from the dropdown menu.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select the **Authentication** option.
4. Click the **New** button to open the Create Authentication screen.
5. In the **General** tab, enter the following information:
 - **Name:** The name of the authentication
 - **Description:** Enter a description for the authentication
 - **Authentication Type:** Choose the **Basic** type from the dropdown.
6. Select the **Configuration** tab and 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.
7. 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 15.](#)

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:

1. Select the desired department from the dropdown menu.
2. In the Top menu, select the **Data Adapters** option.

3. In the Left menu, select the **Authentication** option.
4. Click the **New** button to open the Create Authentication screen.
5. Select the **General** tab and provide the following details:
 - **Name:** The name for the configuration.
 - **Description:** A brief description of the configuration.
 - **Authentication type:** Select **OAuth 2.0**.
6. Select the **Configuration** tab, provide the following details in the listed fields:
 - **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:** Provide the access token request URL. 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:** Provide any necessary additional values to include in the response header by entering a **Name** and **Value** for the field. Enter the necessary information into the header fields and click the **Add** button. The Name and Value information you entered is then displayed under the **Header Name** and **Header Value** fields.
 - **Token Request Params:** Enter 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, enter the string into 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.

The screenshot shows a 'Create Authentication' dialog box with two tabs: 'General' and 'Configuration'. The 'Configuration' tab is active. It contains several input fields and a dropdown menu:

- OAuth2 ClientId:** 45493355664-3vi7h119kdl10p3bh8k6c
- OAuth2 ClientSecret:** 79AQfcYAbCbKUmGx
- Refresh Token:** 1/V8KjDpJ83k
- Token Request URL:** http://www.aws.com/vauth2/v4/token
- Method:** POST (dropdown menu)
- Token Request Params:** client_id=<client_id>&client_secret=<client_secret>
- Access Token JSON Path:** \$.access_token
- Access Token:** ya.52.Gp11qBAKzIRGPL

Provide configuration details. This example uses the POST method.



7. 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 15.](#)

Keep the OAuth2.0 configuration up-to-date in the application as it changes based on the web-services provider access and authorization policies.

Deleting Authentication Configuration

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

To delete an authentication configuration:

1. Select the desired department.
2. From the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Authentication**.
4. Hover your cursor over the authentication configuration displayed under the Name field that you wish to delete. The authentication configuration is then highlighted and the **Delete**  button appears.
5. Click the **Delete**  button. You are then prompted to confirm if you wish to delete the authentication configuration.
6. Click the **Yes** option.

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.
- ▶ **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.

These links are not accessible from the ECE Web Admin Console and new JDBC links cannot be created. Pre-configured JDBC links are provided if the installation was upgraded from an installation of ECE 11.6(1) on MSSQL Standard 2014 and can only be viewed or edited from the legacy Administration Console. For more information about viewing and editing JDBC links, see the *Enterprise Chat and Email Administrator's Guide to Data Adapters for Unified CCE*.

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 11](#).
- ▶ **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. Select the desired department.
2. From the Top menu, select the **Data Adapters** option.
3. From the Left menu, select **Access Links**.
4. Click the **New** button to open the Create Access space.
5. Click the **General** tab and provide the following details:
 - **Name:** Type the name of the web service link.
 - **Type:** The value in the field is set to **Web Service - RESTful link** and cannot be changed.
 - **Method:** Select the method for the request from the dropdown menu. The options available are:
 - **GET**
 - **POST**

- **PUT**
- **Delete**

6. **Description:** Type a brief description for the web service link.

The screenshot shows the 'Create Access' form with the 'General' tab selected. The fields are filled as follows:

Field	Value
Name*	Test Web Service Link
Type*	Web Services - RESTful
Method*	GET
Description	This is meant for testing

Set the general properties of the access link

7. Select the **Input** tab and 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 11](#). 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. You can select an existing header or create a new one. Click the **Add** button to create the header once the Header Name and Header Value fields have been set.

The screenshot shows the 'Create Access' form with the 'Input' tab selected. The fields are filled as follows:

Field	Value
URL*	https://api.intrinio.com/data_point?iden
Authentication*	test
Accept*	application/json
Content-Type*	application/json
Body	Enter Content
Headers	Header Name: Enter Header Name, Header Value: Enter Header Value, Add button

Set the input properties.

8. Select the **Output** tab and click the **New** button to open up the Create Output Format window. Enter information for the following fields:

- **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.

9. Click the **Done** button to add the output path.

Set the output properties

10. 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. Select the desired department from the top-level dropdown menu.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select the **Access Links** option. A list of all the access links you have created is displayed.
4. Select the access link you wish to test.
5. Click the **Test** button.
6. 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 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. Select the desired department.
2. From the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Access Links**.
4. Hover your cursor over the access link that you wish to delete. The access link is highlighted and the **Delete**  button appears.
5. Click the **Delete**  button. You are then prompted to confirm if you wish to delete the access link.
6. Click the **Yes** option to delete the access link.



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



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

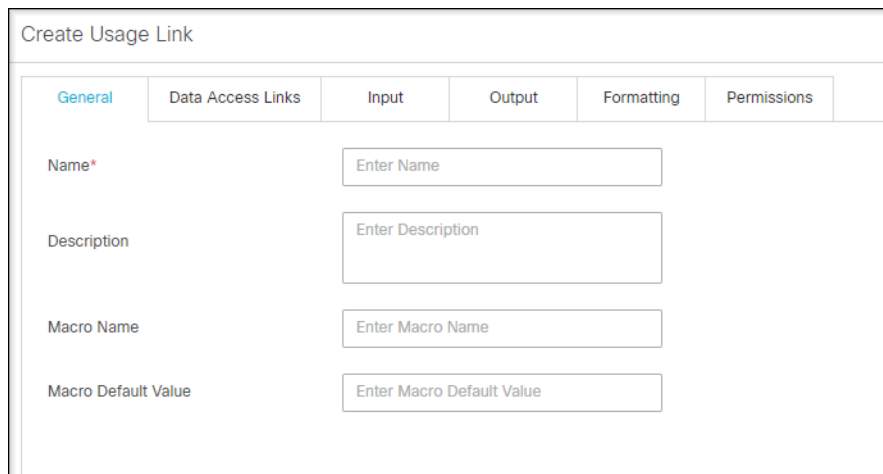
After you have created access links, you can define the display format of the data that is fetched by the access link. This is done using usage links. Similar to knowledge base articles, usage links support macros, making them simple to use in workflows, and by agents and KB authors.

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 15](#).

To create a usage link:

1. Select the desired department
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Usage Links**.
4. Click the **New** button.
5. Select the **General** tab and provide the following details.
 - **Name:** Type the name of the usage link.
 - **Description:** Type a brief description.




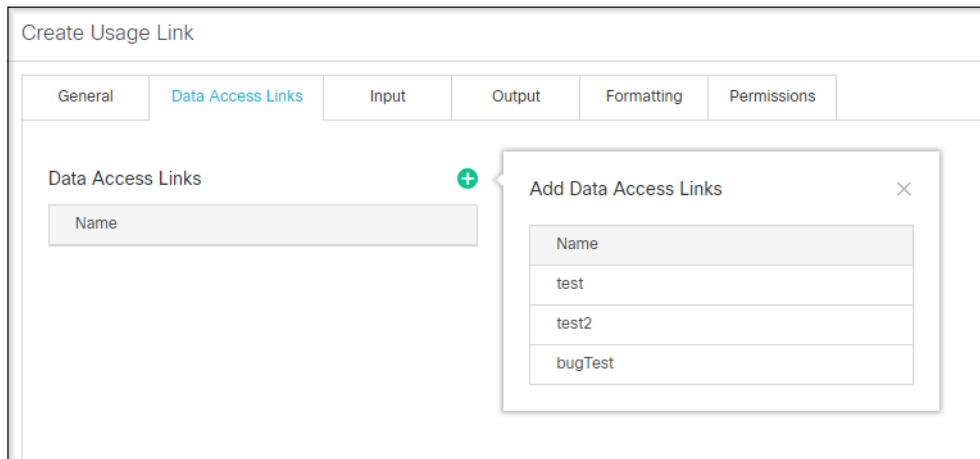
The screenshot shows a web form titled "Create Usage Link". At the top, there are six tabs: "General" (selected), "Data Access Links", "Input", "Output", "Formatting", and "Permissions". Below the tabs, there are four input fields, each with a label and a text box containing a placeholder:

- Name***: Enter Name
- Description**: Enter Description
- Macro Name**: Enter Macro Name
- Macro Default Value**: Enter Macro Default Value

Set the general properties

6. Select the **Data Access Links** tab.

7. Click the **Search and Add**  button to open up the Add Data Access Links menu. You can add any access links that you have previously created here.

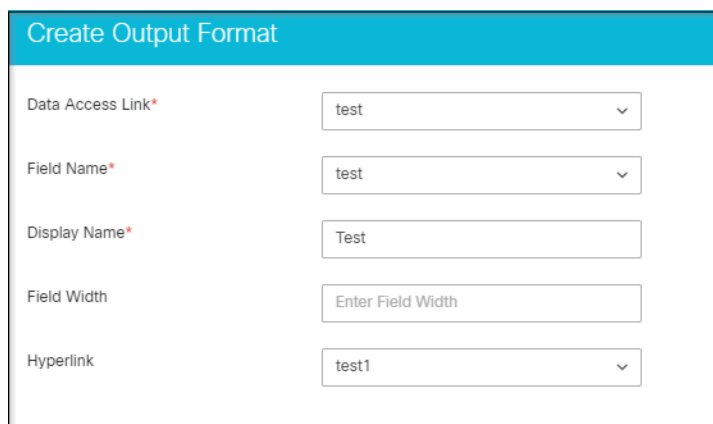


Select the desired data access links.

8. Select the **Input** tab. This 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.

9. Select the **Output** tab from the tabs list.
10. Click the **New** button to open the Create Output Format window. Enter 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.

The image shows a 'Create Output Format' dialog box with a blue header. It contains five fields:

- Data Access Link***: A dropdown menu with 'test' selected.
- Field Name***: A dropdown menu with 'test' selected.
- Display Name***: A text input field with 'Test' entered.
- Field Width**: A text input field with 'Enter Field Width' entered.
- Hyperlink**: A dropdown menu with 'test1' selected.

Set the output properties using the dropdown menus

11. Click the **Done** button.

After creating the usage links, create macros for the usage links ([page 23](#)), configure the display of results for the Agent Console ([page 23](#)), assign permissions to users so that they can access the usage links ([page 24](#)), and test the usage links ([page 25](#)).

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. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Usage Links**.
4. Select the desired link from the list under the Name field.
5. Select the **General** tab from the Tabs list and provide the following details.
 - **Macro name:** Enter 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.
6. 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. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Usage Links**.
4. Select the desired usage link from the list under the **Name** field.
5. Select the **Formatting** tab from the tabs list and 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 the toggle switch to enable it.

The screenshot shows a configuration window titled "Edit Usage Link : test1". It has several tabs: "General", "Data Access Links", "Input", "Output", "Formatting" (which is highlighted in blue), and "Permissions". Under the "Formatting" tab, there are three settings:

- "Header": A text input field containing the word "Test".
- "Footer": A text input field containing the word "Test".
- "Include Column Headers in Response": A toggle switch that is currently turned off (disabled).

Set the formatting. Note that the 'Include Column Headers in Response' option is disabled.

6. 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. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Usage Links**.
4. Select the usage link you wish to assign permissions for under the Name field.
5. Select the **Permissions** tab from the Tabs list.

- From the **Types** box, select the **User** option to individually provide permissions to users, or select the **Group** option to grant permission to all of the users in a particular group, or groups.

Name	Own	View	Edit	Delete	Execute
Konstantin Goldman	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Himanshu Gupta	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pritya Gupta	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ashley Height	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avinash Nigam	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nataliya Rez	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pushkaraj Shingre	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
testtag a	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQ agent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Types box displayed with the User option selected and the permission fields displayed.

- After selecting either your preferred option, use the following fields to apply permissions. Note that both the User and Group options use the same fields.
 - 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.
- Click the **Save** button.

Testing Usage Links

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 usage links:

- Select the desired department.
- In the Top menu, select the **Data Adapters** option.
- In the Left menu, select **Usage Links**.
- Select the usage link you wish to test from under the Name field.
- Click the **Test** button.
- The Results window opens, displaying the results of your test.



Deleting Usage Links

To be able to delete a usage link, you need to have the necessary permissions to delete 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. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Usage Links**.
4. Hover your cursor over the usage link that you wish to delete. The usage link is highlighted and the **Delete**  button appears.
5. Click the **Delete**  button. You are then prompted to confirm if you wish to delete the usage link.
6. Click the **Yes** option to delete.



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



Data Usage Link Groups

- ▶ [About 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.

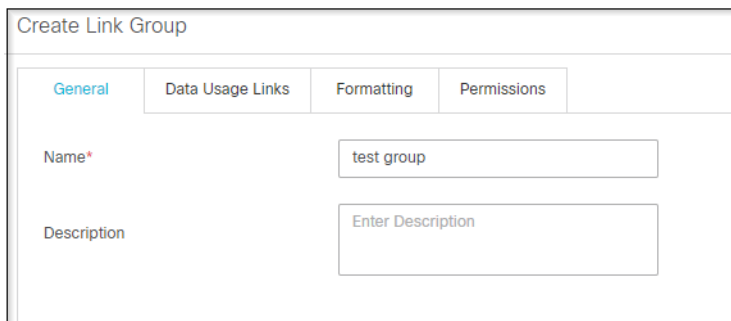
About Usage Link Groups

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 20](#).

Creating Usage Link Groups


To create a link group:

1. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Link Groups**.
4. Click the **New** button to open the Create Link Group space.
5. Select the **General** tab, provide the following details.
 - **Name:** Type the name of the usage link group.
 - **Description:** Type a brief description.

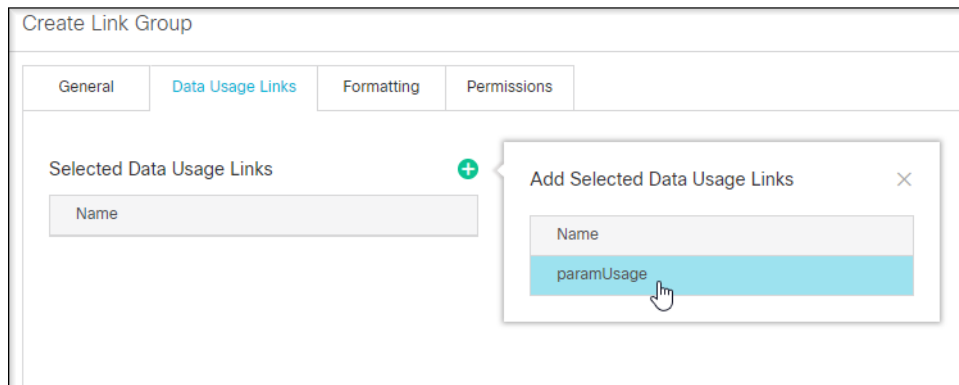


The screenshot shows a web interface titled "Create Link Group". It has four tabs: "General" (selected), "Data Usage Links", "Formatting", and "Permissions". Under the "General" tab, there are two input fields. The first is labeled "Name*" and contains the text "test group". The second is labeled "Description" and contains the placeholder text "Enter Description".

Set the general properties.

6. Select the **Data Usage Links** tab.
7. Click the **Search and Add**  button.

8. In the Add Selected Data Usage Links pop-up, select the desired data usage link from the list.



Select the desired data usage links

9. Click the **Save** button.

After creating the usage link groups, configure the display of results for the Agent Console ([page 29](#)) and assign permissions to users so that they can access the usage link group ([page 30](#)).

Configuring the Display of Results

You can also configure how the results should appear in the Agent Console.

To configure the display of results:

1. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Link Groups**.
4. Select the link group you wish to format.
5. Select the **Formatting** tab.
 - **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.

Create Link Group

General Data Usage Links **Formatting** Permissions

Number of Rows* Enter Number of Rows

Number of Columns* Enter Number of Columns

Orientation Fill columns and then fill rows

Header Enter Header

Footer Enter Footer

Set the formatting

6. 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. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Link Groups**.
4. Select the link group you wish to edit.
5. Select the **Permissions** tab.
6. In the Types box, choose the permission type you wish to set. Options include:
 - **User:** Sets permissions at the individual user level.
 - **Group:** Sets permissions at the user group level.
7. Once you have selected a permission type, 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.

Types	Name	<input type="checkbox"/> Own	<input type="checkbox"/> View	<input type="checkbox"/> Edit	<input type="checkbox"/> Delete	<input type="checkbox"/> Execute
User	Konstantin Goldman	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group	Himanshu Gupta	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pritya Gupta	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Ashley Haight	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Avinash Nigam	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Nataliya Rez	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pushkaraj Shingre	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	testtag a	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PQ agent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Set the permissions

8. 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 30](#).

To delete a usage link group:

1. Select the desired department.
2. In the Top menu, select the **Data Adapters** option.
3. In the Left menu, select **Link Groups**.
4. Hover your cursor over the link group that you wish to delete. The link group is highlighted blue and the **Delete** button appears.
5. Click the **Delete** button. You are then prompted to confirm if you wish to delete the link group.
6. A message appears asking to confirm the deletion. Click **Yes** to delete the usage link group.



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

These examples follow the process outlined in “Creating Web Service - RESTful Links” on page 16. Please refer to this section for more information about creating access links.



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. Navigate to **Data Adapters > Access Links**.
3. In 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**.
4. Select 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**.

The screenshot shows the 'Create Access' dialog box with the 'Input' tab selected. The fields are as follows:

Field	Value
URL*	http://api.openweathermap.org/data/2.!
Authentication*	None
Accept*	application/json
Content-Type*	application/x-www-form-urlencoded...
Body	Enter Content

Sample link for getting weather information

5. Select the Output tab and click the **New** button. 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**.

The screenshot shows the 'Create Output Format' dialog box with the following fields:

Field	Value
Extract Or Filter*	Extract
Path*	\$. weather[0]['description']
Internal Field Name*	Weather
Field Order*	1
Decoding	Enter Decoding

The Output tab seen with the example information added.

6. Click the **Save** button.
7. Select the access link you just created from the list.
8. Click the **Test** button. The Test Data Access Link window appears.
9. In the Test Data Access Link window, type the city name as *Sunnyvale*.
10. The Results tab then displays 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 authentication:

1. Sign-up at <https://intrinio.com> and get the API username and password to be used for the data adapter.
2. Navigate to **Data Adapters > Authentication**.
3. Select the **Authentication** option from the left menu and click the **New** button. Follow the instructions outlined in “[Configuring Basic Authentication](#)” to configure authentication using the username and password generated from <https://intrinio.com>. Name this example authentication “Intrinio Basic Auth”.

Create the Access Link

To create a link:

1. Navigate to **Data Adapters > Access Links**.
2. Click the **New** button.
3. Select 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**.
4. Select 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 example “Intrinio Basic Auth” example you just created for <https://intrinio.com>.
 - **Accept:** Set as **application/json**.

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

Edit Access : Stock Rates

General **Input** Output

URL*

Authentication*

Accept*

Content-Type*

Body

Sample link for getting stock rates

5. Select the **Output** tab, click the **New** button, and 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 **Done** button to return to the Output Format page. Then click the **New** button.

- **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 **Done** button. You should have two output formats listed.

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

Configure the output.

6. Click the **Save** button.
7. Once you have returned to the Access Links list, select the Stock Rates link you just created.
8. Click the **Test** button. The Test Data Access Link window appears.
9. In the Test Data Access Link window, type the ticker_sym as **IBM**.
10. The Result tab then displays 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 URL Shortener 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 console, navigate to **Data Adapters > Authentication**
3. Click the **New** button.
4. 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.

Create Authentication

General Configuration

OAuth2 ClientId: 45933955664-3vi7h11k9d10p3bh8k6c

OAuth2 ClientSecret: 79AQfcYAbCbKUmGx0Hjx4Ys

Refresh Token: /V8kjDpJ83KbZkAQprVJ0-InCSz4ILBqB

Token Request URL*: <https://www.googleapis.com/oauth2/v4/token>

Method*: POST

Token Request Params: client_id=<client_id>&client_secret=&refresh_token=<refresh_token>&grant

Access Token JSON Path*: \$.access_token

Access Token: ya29.G-1x0-VzhtO5ZdxpuHBLpet2C8xWDXvLdyG-3aNaFki_A9fTDeACLZPN

Configure OAuth authentication

5. Click the **Save** button.

Create the Access Link

To create a link:

1. Navigate to **Data Adapters > Access Links**.
2. Click the **New** button
3. Select the **General** tab and 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**.
4. Select 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.
5. Select the Output tab, click the **New** button, 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 **Done** button.
6. Click the **Save** button.
7. Click the **Test** button. The Test Data Access Link window appears.
8. In the Test Data Access Link window, type any URL.
9. The Results tab then displays the shortened URL returned by the Google API.