Schemas Defined in an Activity

Introduction

Schemas used in a transformation either are inherited from connector activities that are initially adjacent to a transformation (as described on this page), or they are defined in a transformation (see How Schemas Are Defined in Schema Usage). Schemas defined in an activity that are inherited by an adjacent transformation are not considered to be part of the transformation.

A schema defined in an adjacent activity (or an initially adjacent activity that has since been removed) takes precedence over a schema defined in a transformation.

If a transformation inheriting a schema from an activity is referenced in another operation and the activity providing the schema is not adjacent in the current operation, the transformation remains unchanged and continues to inherit the schema from the activity that is no longer adjacent (see Transformation Reuse).

If an activity providing a schema to a transformation is deleted, that schema then becomes part of the transformation and becomes defined directly in the transformation. If the deleted activity was providing a response schema to a transformation, that transformation would become invalid, as a transformation with a source schema is required to be preceded by an activity providing a response schema. Other rules and patterns for constructing a valid operation are covered in Operation Validity.

Defining a Schema in an Activity

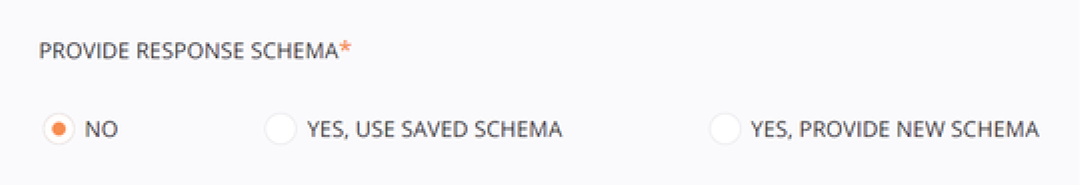
The ability for a user to provide a schema is included as a step in the configuration of a file-based activity. The interface for defining request and response schemas is the same among these connector activities and is covered on this page:

- **API:** Request and Response activities
- **File Share:** Read and Write activities
- **FTP:** Read and Write activities
- **HTTP:** GET, PUT, POST, DELETE, and Custom activities
- **Local Storage:** Read and Write activities
- **Temporary Storage:** Read and Write activities
- **Variable:** Read and Write activities

> **NOTE:** API SOAP Request and Response activities and SOAP activities are also file-based activities but have unique configuration screens, as documented on the linked pages.

An example of defining a schema in a File Share **Read** activity is included below.

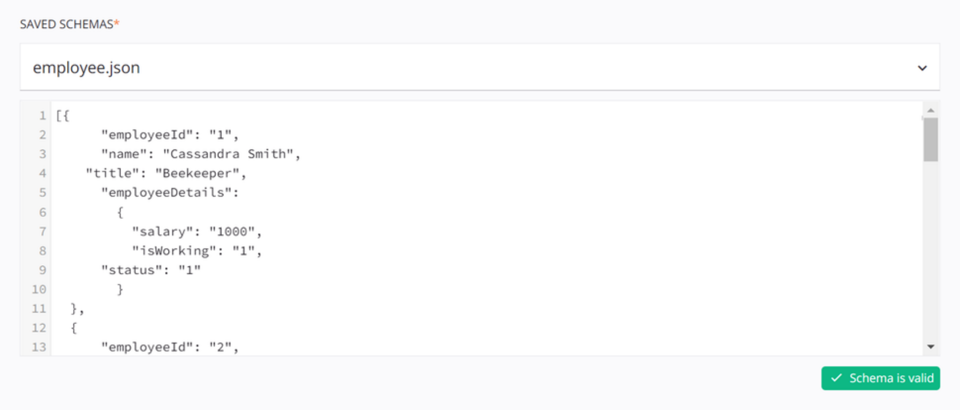
During configuration of the above file-based activities, you select one of three options in a section called **Provide Response Schema** or **Provide Request Schema**:



PROVIDE RESPONSE SCHEMA*

● NO ○ YES, USE SAVED SCHEMA ○ YES, PROVIDE NEW SCHEMA

- **No:** Choose this option to skip defining a schema in the activity. You may want to select this option if you define the schema directly in the transformation (see Schemas Defined in a Transformation), or if no schema is required for your use case (see Schema Usage).
- **Yes, Use Saved Schema:** Choose this option to select an existing schema that has previously been defined in the current project. When this option is selected, this section becomes available:



SAVED SCHEMAS*

employee.json

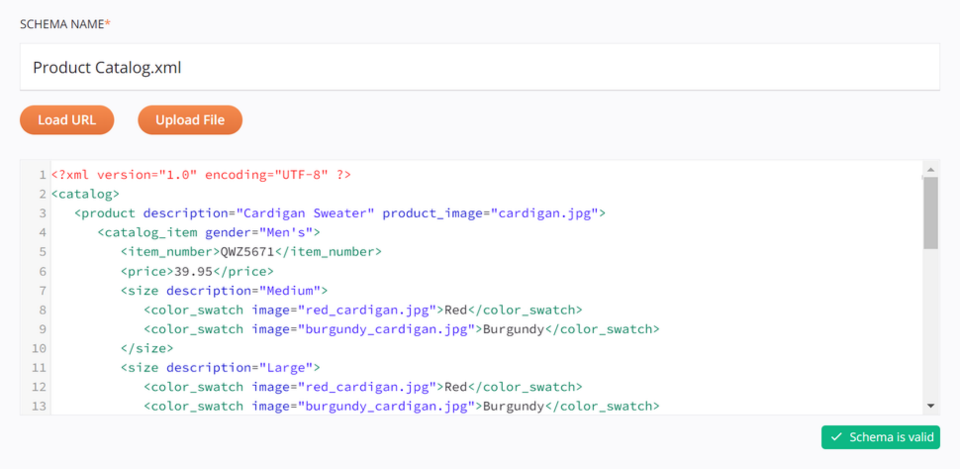
```
[{
      "employeeId": "1",
      "name": "Cassandra Smith",
    "title": "Beekeeper",
      "employeeDetails":
        {
          "salary": "1000",
          "isWorking": "1",
      "status": "1"
        }
  },
  {
      "employeeId": "2",
```

✓ Schema is valid

  - **Saved Schemas:** Use the dropdown to select from an existing schema to reuse.
  - **View Schema:** After an existing uploaded schema is selected, you can view the schema directly within the text area below the dropdown. To view the schema in a larger area, click the popout icon (after opening that area, click the return icon to come back to this screen).

    Though a saved schema is not editable, this text area can be copied using `Control+C` (Windows or Linux) or `Command+C` (macOS).

    This text area is only for the display of existing uploaded schemas and does not display flat, hierarchical, or mirrored custom schemas.
  - **Validation:** Validation information is provided below the text area and is based on the file extension of the saved schema.
- **Yes, Provide New Schema:** Choose this option to define a new schema by loading one from a URL, uploading a file, or manually entering one into the text area. When this option is selected, this section becomes available:



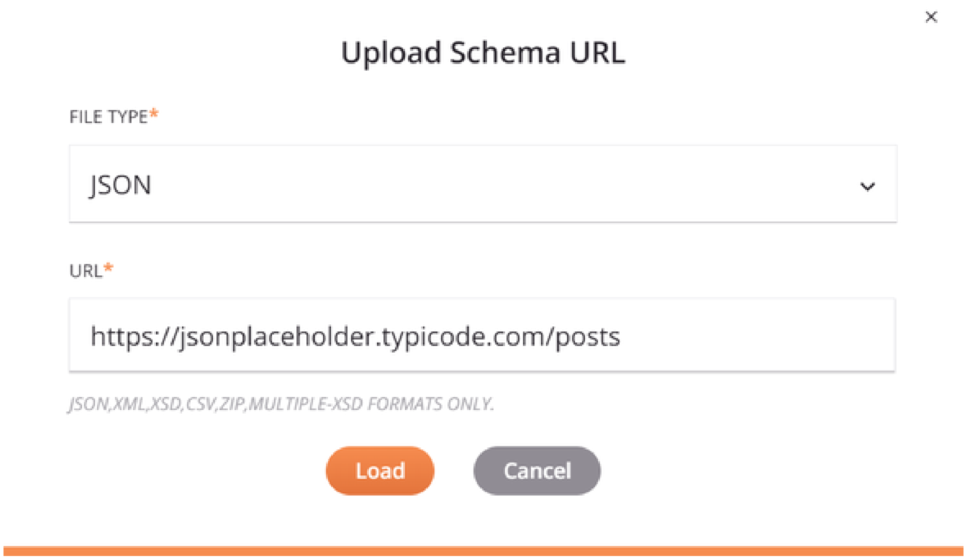
SCHEMA NAME*

Product Catalog.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<catalog>
   <product description="Cardigan Sweater" product_image="cardigan.jpg">
      <catalog_item gender="Men's">
         <item_number>QWZ5671</item_number>
         <price>39.95</price>
         <size description="Medium">
            <color_swatch image="red_cardigan.jpg">Red</color_swatch>
            <color_swatch image="burgundy_cardigan.jpg">Burgundy</color_swatch>
         </size>
         <size description="Large">
            <color_swatch image="red_cardigan.jpg">Red</color_swatch>
            <color_swatch image="burgundy_cardigan.jpg">Burgundy</color_swatch>
```

✓ Schema is valid

  - **Schema Name:** Enter a name for the schema into the upper text box, including the file extension (`.csv`, `.json`, `.multiple-xsd`, `.xml`, `.xsd`, or `.zip`). If no file extension is provided, the file is treated as JSON by default. If you are loading the schema from a URL or uploading a file, you can leave this blank, as the name will be populated once the file is loaded. Once you upload a file in a selected format, manually changing the extension has no effect.
  - **Load URL:** Click to open a dialog where you can load a schema from a URL:



Upload Schema URL

FILE TYPE*

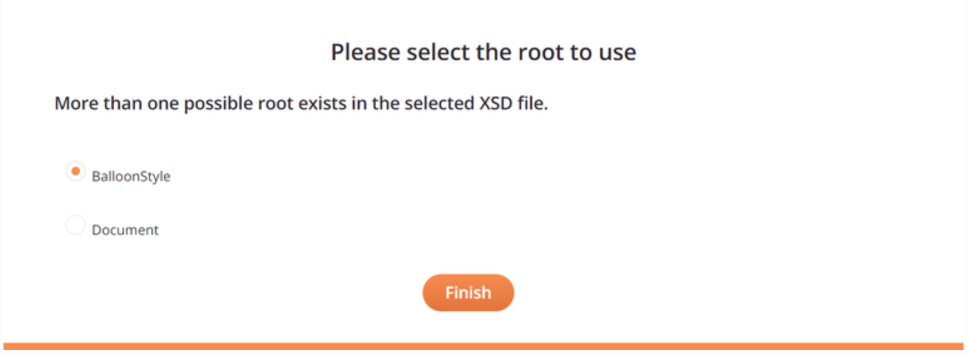
JSON

URL*

https://jsonplaceholder.typicode.com/posts

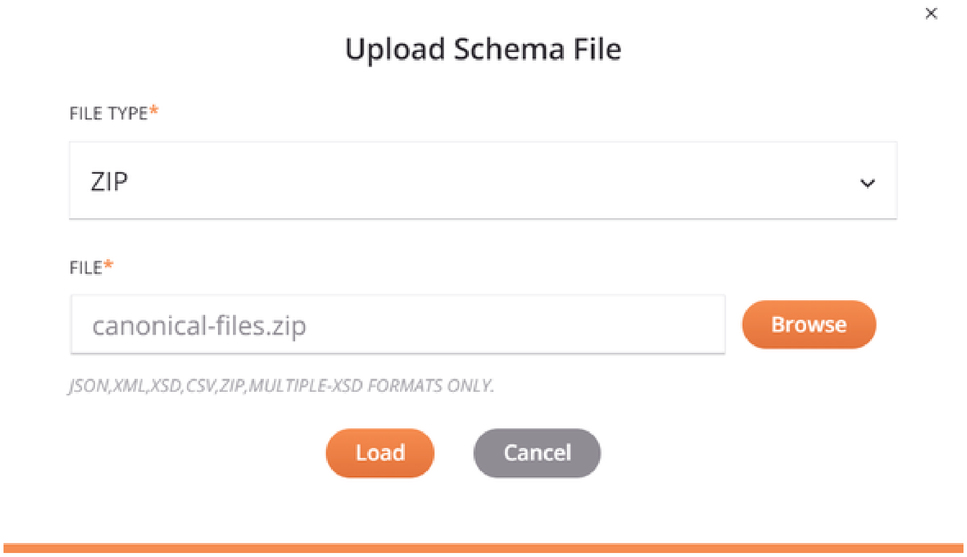
JSON,XML,XSD,CSV,ZIP,MULTIPLE-XSD FORMATS ONLY.

    - **File Type:** Use the dropdown to select from the supported file types, including **CSV**, **JSON**, **MULTIPLE-XSD**, **XML**, **XSD**, and **ZI**. Take note:
      - **XSD:** An XSD provided by URL can import/include other XSD URLs by reference.
      - **ZIP:** A ZIP archive can contain a collection of XSDs, which can import/include each other by reference. Any non-XSD files in the archive are ignored. Multiple directory levels are supported.
    - **URL:** Enter a URL that is accessible without authentication. Files up to 5 MB in size can be uploaded.
    - **Load:** Click to load the schema from the URL. Note that the file is retrieved only a single time for schema generation. In addition, be aware that some data may be converted during processing as described in Schema Processing.

> **NOTE:** When uploading an XSD or MULTIPLE-XSD file that contains multiple top-level elements, on clicking **Next** to advance to the next step, you are prompted to select the desired root node. Select the desired element and then click **Finish** to upload the file:
>
> 
>
> Please select the root to use
>
> More than one possible root exists in the selected XSD file.
>
> ● BalloonStyle
>
> ○ Document
>
>

    - **Cancel:** Click to close the **Upload Schema URL** dialog without saving.

- **Upload File:** Click to open a dialog where you can load a schema from a file that is accessible from the current machine:



Upload Schema File

FILE TYPE*: ZIP

FILE*: canonical-files.zip

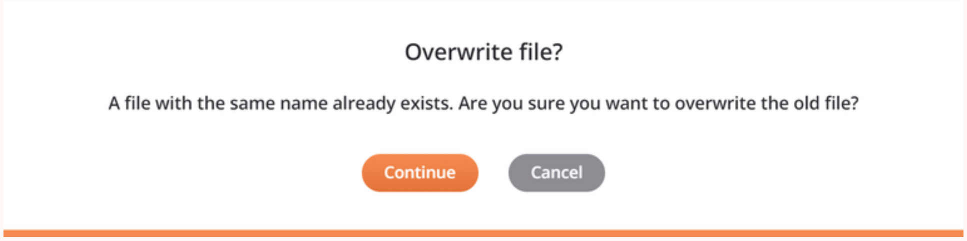
JSON,XML,XSD,CSV,ZIP,MULTIPLE-XSD FORMATS ONLY.

    - **File Type:** Use the dropdown to select from the supported file types, including **CSV**, **JSON**, **MULTIPLE-XSD**, **XML**, **XSD**, and **ZI**
    .

    > **NOTE:** A ZIP archive can contain a collection of XSDs, which can import/include each other by reference. Any non-XSD files in the archive are ignored. Multiple directory levels are supported.

    - **File:** Use the **Browse** button to the right to browse to a file that has not yet been used in the current project. Files up to 5 MB in size can be uploaded.

WARNING: If you try to upload a file with the same name as an existing file already defined in the project, on clicking **Next** to advance to the next step, a dialog asks if you want to overwrite the existing file. If you click **Continue**, the file is replaced with the new file with the same name in all places where it is used in the project. If you don't want to overwrite the file, click **Cancel**. Then manually modify the file so it has a unique name and then try to upload it again.

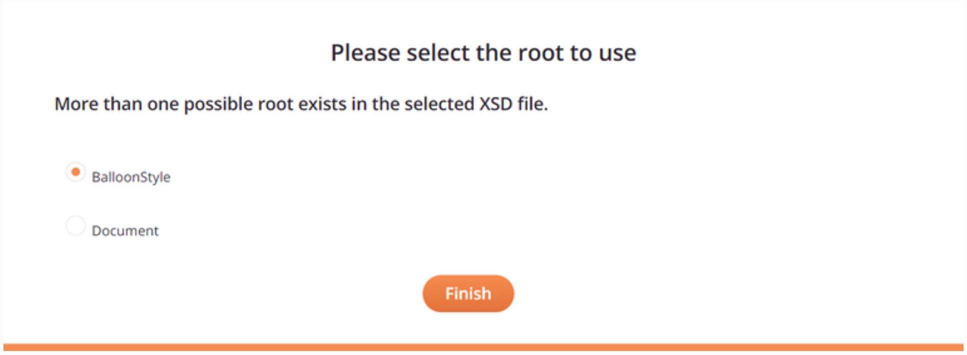


Overwrite file?

A file with the same name already exists. Are you sure you want to overwrite the old file?

- **Load:** Click to load the schema from the file. Note that some data may be converted during processing as described in Schema Processing.

NOTE: When uploading an XSD or MULTIPLE-XSD file that contains multiple top-level elements, you are prompted to select the desired root node. Select the desired element and then click **Finish** to upload the file:



Please select the root to use

More than one possible root exists in the selected XSD file.

● BalloonStyle

○ Document

- **Cancel:** Click to close the **Upload Schema File** dialog without saving.

- **View/Edit Schema:** If you are not uploading a schema, you can enter one manually into the text area below the **Load URL** and **Upload File** buttons. Otherwise, after uploading a schema, you can view or edit the schema directly within that text area.

  To view or edit the schema in a larger area, click the popout icon ⤢ (after opening that area, click the return icon ⤡ to come back to this screen).

  This text area can also be copied using `Control+C` (Windows or Linux) or `Command+C` (macOS).
- **Validation:** As you edit a schema, validation information is provided below the text area, with any errors reported one line at a time. That is, after resolving an error on one line, additional syntax errors to resolve may be reported for subsequent lines. Validation is based on the file extension of the provided schema.

Schema Actions Menu

After a schema is defined in an activity, you can access additional menu options that are available for all schemas.

These include **Delete**, **Rename**, **View Dependencies**, **Deploy**, **Configurable Deploy**, and **Add to Group**, as well as **Edit Schema** and **Clear Schema**. F or details on these actions, see Schema Actions Menu.