Using the API

The API allows you to call Smart Flows' functions from an external program.

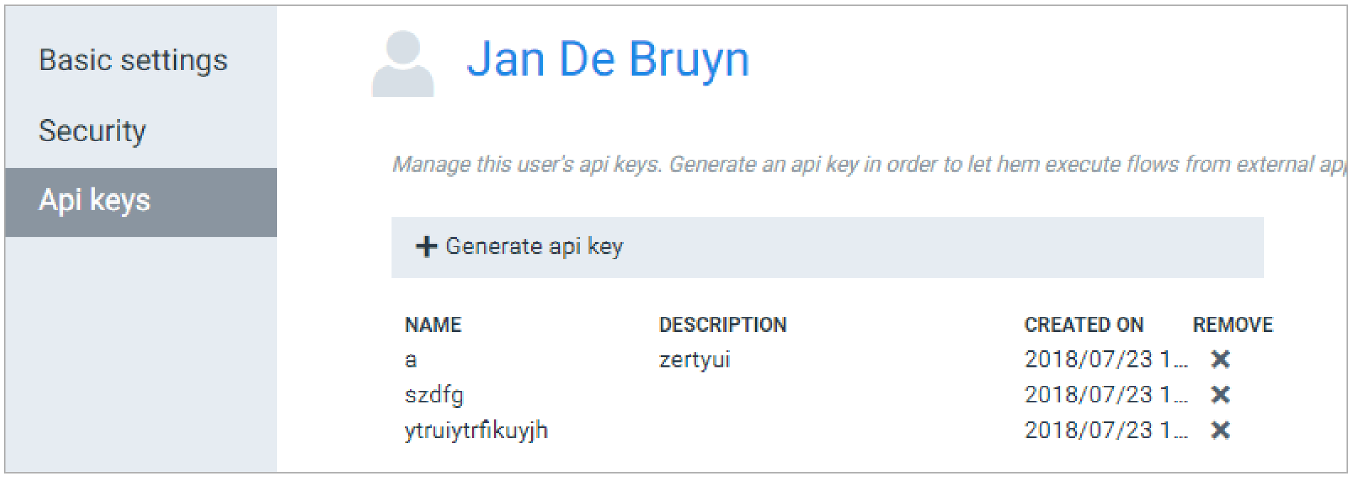
You need Smart Flows Connect or an other version of Smart Flows with the appropriate license in order to use to API.

Concept

For a developer, using the Smart Flows API is like using any other REST API - and there's enough literature about that on the internet. In particular, for Smart Flows, you'll need to **authenticate** before you can use the API.

API keys

Authentication is done through **API keys**. Every call you do requires a valid API key, which can be assigned to a user in the Project Console:



Manage this user's api keys. Generate an api key in order to let hem execute flows from external ap

NAME	DESCRIPTION	CREATED ON	REMOVE
a	zertyui	2018/07/23 1...	✕
szdfg		2018/07/23 1...	✕
ytruiytrfikuyjh		2018/07/23 1...	✕

You can generate API keys and remove them on the user screen. A key is only shown once so take care to store it safely. You can remove a current key by clicking the remove cross - once a key has been removed, all calls using that key will be invalid.

Using a user's API key is like using the user to do something - **you're borrowing that user's rights**. So you won't be able to do everything with every key - a key that's assigned to an **administrator** can be used for actions that a **user** is prohibited from doing, such as adding a printer.

This approach has several benefits:

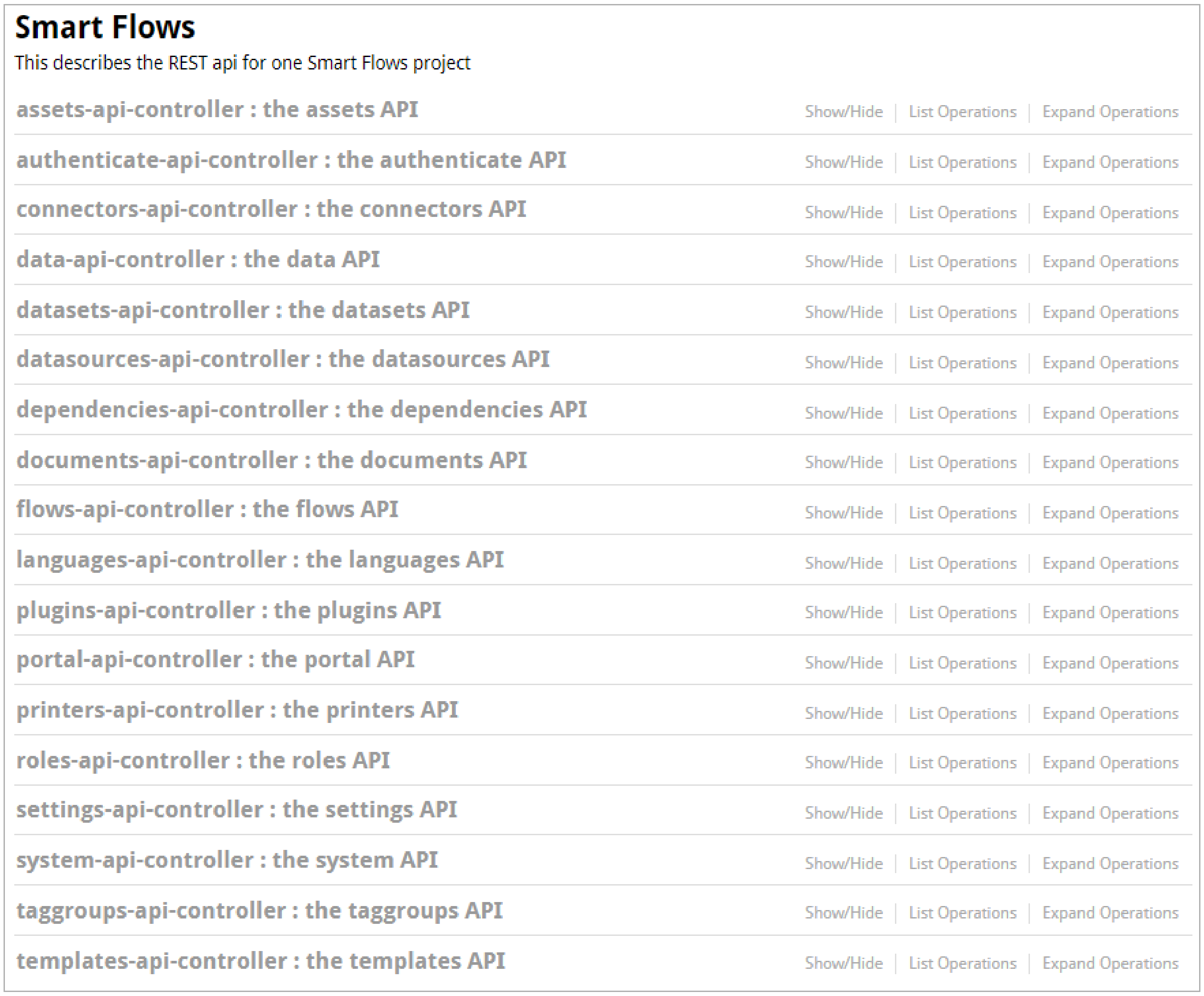
- You can decide which keys, with which rights, are used for which calls.
- You could then shut down only a part of the API calls, by removing the right API key from the user in the Project Console.
- You could hand out unique keys to third parties so that you always know every call they do, since they only have one key to use.

Using API keys in calls

To authenticate properly, use the API key as follows: every HTTP call needs to contain the header **X-API-KEY** with your API key as the value.

List of possible API calls

You can find a list of all the possible API calls by going to this url: **<baseurl>/swagger-ui/** where **<baseurl>** is the base URL of your project, such as **smart flowsexampleproject.xpertdoc.eu**. You'll see this screen:



Smart Flows

This describes the REST api for one Smart Flows project

assets-api-controller : the assets API — Show/Hide | List Operations | Expand Operations

authenticate-api-controller : the authenticate API — Show/Hide | List Operations | Expand Operations

connectors-api-controller : the connectors API — Show/Hide | List Operations | Expand Operations

data-api-controller : the data API — Show/Hide | List Operations | Expand Operations

datasets-api-controller : the datasets API — Show/Hide | List Operations | Expand Operations

datasources-api-controller : the datasources API — Show/Hide | List Operations | Expand Operations

dependencies-api-controller : the dependencies API — Show/Hide | List Operations | Expand Operations

documents-api-controller : the documents API — Show/Hide | List Operations | Expand Operations

flows-api-controller : the flows API — Show/Hide | List Operations | Expand Operations

languages-api-controller : the languages API — Show/Hide | List Operations | Expand Operations

plugins-api-controller : the plugins API — Show/Hide | List Operations | Expand Operations

portal-api-controller : the portal API — Show/Hide | List Operations | Expand Operations

printers-api-controller : the printers API — Show/Hide | List Operations | Expand Operations

roles-api-controller : the roles API — Show/Hide | List Operations | Expand Operations

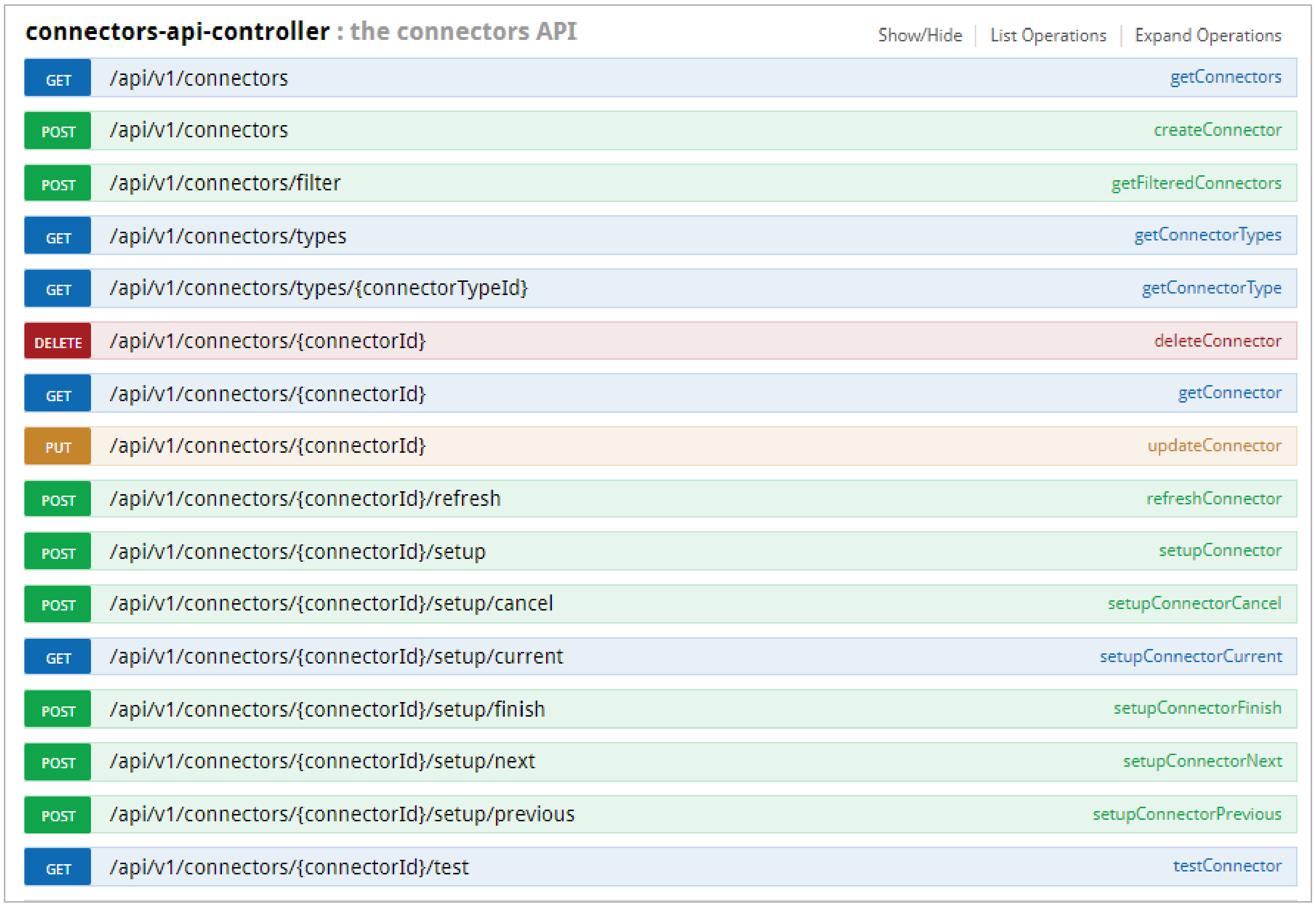
settings-api-controller : the settings API — Show/Hide | List Operations | Expand Operations

system-api-controller : the system API — Show/Hide | List Operations | Expand Operations

taggroups-api-controller : the taggroups API — Show/Hide | List Operations | Expand Operations

templates-api-controller : the templates API — Show/Hide | List Operations | Expand Operations

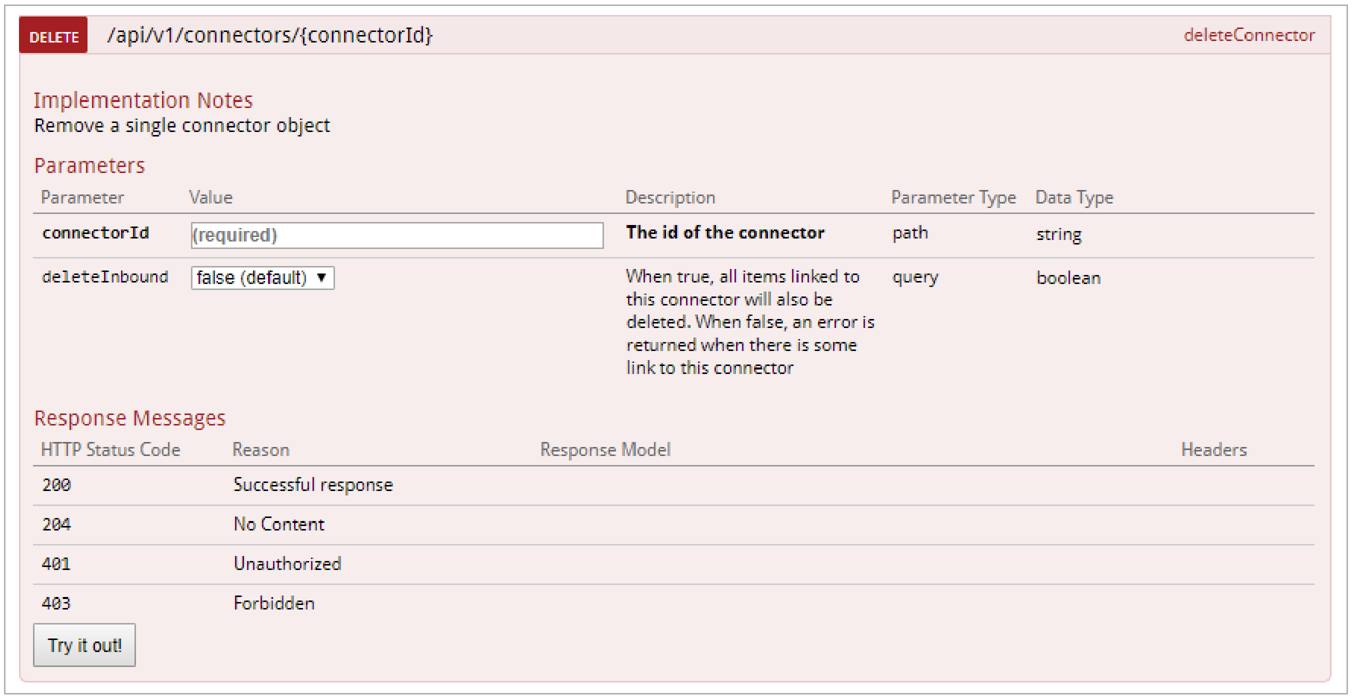
Click a section to expand it:


connectors-api-controller : the connectors API

Show/Hide | List Operations | Expand Operations

GET	/api/v1/connectors	getConnectors
POST	/api/v1/connectors	createConnector
POST	/api/v1/connectors/filter	getFilteredConnectors
GET	/api/v1/connectors/types	getConnectorTypes
GET	/api/v1/connectors/types/{connectorTypeId}	getConnectorType
DELETE	/api/v1/connectors/{connectorId}	deleteConnector
GET	/api/v1/connectors/{connectorId}	getConnector
PUT	/api/v1/connectors/{connectorId}	updateConnector
POST	/api/v1/connectors/{connectorId}/refresh	refreshConnector
POST	/api/v1/connectors/{connectorId}/setup	setupConnector
POST	/api/v1/connectors/{connectorId}/setup/cancel	setupConnectorCancel
GET	/api/v1/connectors/{connectorId}/setup/current	setupConnectorCurrent
POST	/api/v1/connectors/{connectorId}/setup/finish	setupConnectorFinish
POST	/api/v1/connectors/{connectorId}/setup/next	setupConnectorNext
POST	/api/v1/connectors/{connectorId}/setup/previous	setupConnectorPrevious
GET	/api/v1/connectors/{connectorId}/test	testConnector

Click a service to expand it:


DELETE /api/v1/connectors/{connectorId} deleteConnector

Implementation Notes

Remove a single connector object

Parameters

Parameter	Value	Description	Parameter Type	Data Type
connectorId	(required)	**The id of the connector**	path	string
deleteInbound	false (default) ▾	When true, all items linked to this connector will also be deleted. When false, an error is returned when there is some link to this connector	query	boolean

Response Messages

HTTP Status Code	Reason	Response Model	Headers
200	Successful response		
204	No Content		
401	Unauthorized		
403	Forbidden		

Try it out!

Example: run a flow, wait for completion, get flow output

Let's give a typical example to illustrate the process. We'll run a flow, wait for it to complete, then retrieve the flow's output.

Run a flow

There are a 3 ways to start a flow. This is defined in the "Start this flow from"-block in the flow builder

1. Start a flow without input data, pick "The Flow Execution Panel".
2. Start a flow using a plugin specific input dataset (Dynamics & Sugar), pick Dynamics or ...
3. Start a flow with input according to an xsd schema dataset, pick "Another program" and your schema data set

Running a flow is creating a flow execution. Here's the request:

```
POST https://{host}:{port}/api/v1/flows/executions?flowId={flowId}
```

Note: the flowId is optional, when omitted, the user will need to specify a flow as a first step which's primary data set corresponds to the input data.

Headers:

- Name = Content-Type / Value = application/json; charset="utf-8"
- Name = X-API-Key / a valid API key

Body:

1. No data
2. Your data in JSON format, according to the following structure

   ```
   {
   "id":["XXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX"],
   "entity":"account",
   "userId":"XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
   "organizationUniqueName":"organizationName"
   }
   ```

   id: The id's of the records from which the flow can be started

   entity: The name of the entity

   userId: The id of the user in Dynamics who executes the flow

   organizationUniqueName: The unique name of the organization defined by Dynamics

   Response:

   ```
   {
     "id":"6de9206a-de42-4182-8f86-a9a8d29fbd56",
     "percentage":0,
     "message":"Generate document",
     "status":"Running"
   }
   ```

   We'll use this ID in the next call.
3. Your data in XML format, according to the structure defined by the flow's primary schema data set.

Wait for completion

Once a flow is running, we need to wait until it's done before we can do something with the output. So, we need to know its progress. Use the ID from the previous call in this call:

```
GET https://{host}:{port}/api/v1/flows/executions/{executionId}/progress
```

Headers:

- Name = X-API-Key / a valid API key

Response:

```
{
    "id": "85f8fe94-6f61-4216-af6c-4889e2547b72",
    "percentage": 30,
    "message": "Generating Document",
    "status": "Running",
    "schema": {
        ...
    },
    "model": {
        ...
    },
    "form": [
        ...
    ]
}
```

Once the flow returns a stable status (like success or error - a status that won't change anymore), you can get its output.

Get flow output

To get a stable flow execution's output, use the below code with the ID from the previous call:

```
GET https://{host}:{port}/api/v1/flows/executions/{executionId}
```

Headers:

- Name = X-API-Key / a valid API key

Response:

```
{
    "id": "executionid",
    "createdAt": ... ,
    "createdBy": ... ,
    "modifiedAt": ... ,
    "modifiedBy": ... ,
    "status": "Success",
    "flow": {
        "id": "someguid",
        "displayName": "The displayName",
        "type": "flow"
    },
    "state": {
        "inputData": { ... },
        "output": { ... },
        "stages": [ ... ],
        "report": [ ... ]
            }
    }
}
```

The 4 elements under state:

- inputData: the input data that was sent in the first API call.
- output: xd-schema-form representation of the flow output, used the flow execution panel.
- stages: a stage is created for a flow execution when it resumes after waiting for user input, or for an external event. This lists all the stages.
- report: information about all flow steps that were executed in the flow.

Retrieve document

To retrieve the document from the server, use the below code with the document ID from the Flow Output call:

```
GET https://{host}:{port}/api/v1/documents/{documentId}/content
```

Alternatively, use an Output & Delivery step in your Flow to store, print and / or deliver your document.