The objective of this tutorial is implementing [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview). Understand how the system works and the interactions that occur between your app and the API.

**Requests**

* Basic command line management
* Having the cURL installed on the computer terminal
* An **API\_KEY** if [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview)

**User management**

The first thing you have to do to synchronize an institution through Sync API is the user management. Sync’s structure is this:

http://localhost:8080/img/quickstart1.png

This means that you can register a lot of users through your **API\_KEY** and, at the same time, each of this users will register accounts of the institutions they want to synchronize. At the end all the accounts synchronized with each of the institutions that a user registered will be bound to your **API\_KEY**.

# Connection with Sync API

In this tutorial we will implement [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview) thought the interface cURL in the computer terminal. The interaction between the computer terminal and the API is shown here:

http://localhost:8080/img/quickstart2.png

In resume, we will be consuming the endpoints GET/POST/PUT/DELETE of Sync API through our computer terminal

# Tutorial’s flow

In this tutorial, this is what we will do:

1. We will create a user that will be bound to our **API\_KEY**
2. We will query the users bound to our **API\_KEY**
3. We will log in with the user created in step 1
4. We will verify the session created in step 3

From now on we will be logged, with the user created in step 1, so the next actions will be bound to that user:

1. Query the catalogs of the institutions which the user can synchronize with [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview).
2. Register user’s credentials to an institution (SAT).
3. Check the synchronization status of the registered credentials.
4. Query the synchronized transactions.

We hope you will enjoy it. Let’s go!

# 1. Creating the user

# It is very easy to create a user through Sync API, your only need your API\_KEY and the user name.

**INPUT:**

api\_key:

name:

**OUTPUT:** id\_user

curl -X POST -H "Content-type:application/json" -d '{"api\_key":"your\_api\_key","name":"some\_name"}' https://sync.paybook.com/v1/users

With this a new user “name” was been created and bound to your **API\_KEY,** the response of [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview) have to be the next:

{"code":200,"status":true,"message":null,"response":{"id\_user":"573a91a90b212a0e3e8b4596","id\_external":null,"name":"curlhugo1","dt\_create":1463456169,"dt\_modify":null}}

**Important:** Don’t forget to replace the value of the parameters in all the commands.

# 2. User query

To verify the users who are bound to your **API\_KEY**, in other words, bound to your account of [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview), execute the next command:

**INPUT:**

api\_key: 

**OUTPUT:** id\_user

curl -X GET -H "Content-type:application/json" -d '{"api\_key":"your\_api\_key"}' http://sync.paybook.com/v1/users

For purposes of this tutorial, the execution of this command have to return the user registered previously:

{"code":200,"status":true,"message":null,"response":[{"id\_user":"573a91a90b212a0e3e8b4596","id\_external":null,"name":"curlhugo1","dt\_cr

# 3. Logging in

To synchronize the account of any institution the first thing we have to do is logging in with the user we want to be synchronized. For this is necessary to have the user’s id i.e. id\_user and execute:

**INPUT:**

api\_key: 

id\_user: 

**OUTPUT:** token

curl -X POST -H "Content-type:application/json" -d '{"api\_key":"your\_api\_key","id\_user":"id\_user\_value"}' https://sync.paybook.cm/v1/sessions

This command will return a token for example 701c899236ea141d25f63c88d9f09230 as shown next:

{"code":200,"status":true,"message":null,"response":{"token":"701c899236ea141d25f63c88d9f09230"}}

**Important:** The token has an expiration period of 5 minutes after its creation.

# 4. Session verification

It might be of interest verifying the validity of the session **i**n other words the token, for this execute the next command:

**INPUT:**

token: 

**OUTPUT:** code 200 o code 401

curl 'https://sync.paybook.com/v1/sessions/your\_token/verify'

If the session is valid, this will be returned:

{"code":200,"status":true,"message":null,"response":null}

If the session isn’t valid, we will get the code 401 **Unauthorized**

{"code":401,"status":false,"message":"Unauthorized","response":null}

# 5. Query the institutions’ catalogs

Once we have logged in we have to query the institutions’ catalogs that [Sync API](https://www.paybook.com/syncdocs#api-Overview-Overview) has for us so we can chose the institution the institution we want to synchronize for this user.

**INPUT:**

token: 

**OUTPUT:** catalogues

curl 'https://sync.paybook.com/v1/catalogues/sites?token=your\_token'

# 6. Synchronize an institution

The next step consists in choosing an institution from the catalog to synchronize it, for purposes of this tutorial, we will choose SAT, for this we have to get the id of SAT’s site, this value will be returned:

id\_site = '56cf5728784806f72b8b456f'

Once we have chosen the institution we will register the credentials of our user for this institution, in the particular case of SAT the credentials must be **RFC** and **CIEC**:

**INPUT:**

token: 

id\_site: 

rfc: 

ciec: 

**OUTPUT:** url\_status

curl -X POST -H "Content-type:application/json" -d '{"token":"your\_token","id\_site":"some\_id\_site","credentials":{"rfc" : "some\_rfc","password" : "some\_ciec"}}' https://sync.paybook.com/v1/credentials

If the credentials were registered correctly, we will get response like this:

{"code":200,"status":true,"message":null,"response":{"id\_credential":"573b88f90b212a033e8b4582","username":"O\*\*\*\*\*\*\*\*\*\*\*9","ws":"wss://sync.paybook.com/v1/status/573b88f90b212af83d8b457f","status":"https://sync.paybook.com/v1/jobs/573b88f90b212af83d8b457f/status","twofa":"https://sync.paybook.com/v1/jobs/573b88f90b212af83d8b457f/twofa"}}

**Important:** we must save the value of the field **status** – it is an URL – because we will need it later.

# 7. Verify the creation of credentials

As a step of verification we can check the credentials registered for a user:

**INPUT:**

api\_key: 

id\_user: 

**OUTPUT:** credentials\_retrieved

curl 'https://sync.paybook.com/v1/credentials?api\_key=your\_api\_key&id\_user=id\_user\_value'

We will get a response as this:

{"code":200,"status":true,"message":null,"response":[{"id\_credential":"573b88f90b212a033e8b4582","id\_site":"56cf5728784806f72b8b456f","id\_site

# 8. Check the synchronization status

Once we have registered credentials and we have verified that they were saved correctly, the next step consists in check the synchronization status for this taxpayer. For this we will use the value saved of **url\_status** that we got previously by creating the credentials, only we have to add our session token:

curl <valor\_status> + ? + token=<some\_token>

For instance:

**INPUT:**

token: 

**OUTPUT:** status

curl 'https://sync.paybook.com/v1/jobs/573b88f90b212af83d8b457f/status?token=your\_token'

We will get this response by executing this command:

{"code":200,"status":true,"message":null,"response":[{"code":100},{"code":101},{"code":102},{"code":200}]}

This is a set of code that indicates the status of synchronization of the SAT account that the user registered. The description of the code is shown next:

| **CODE** | **DESCRIPTION** |
| --- | --- |
| 100 | A new job was registered on the API |
| 101 | The registered job is gotten and it will start working |
| 102 | The log in was successful and the information is being synchronized |
| 200 | The data was processed successfully |
| 201 | The data was processed successfully, and the download will start |
| 202 | No transactions found |

# 9. Query transactions

Once the credentials are registered, in case of having a status code 200, 201 o 202 we can query the transactions. For this we will execute the next command:

**INPUT:**

token: 

id\_site: 

**OUTPUT:** transactions\_count

curl 'https://sync.paybook.com/v1/transactions/count?token=your\_token&id\_site=some\_id\_site'

And this will respond with the number of synchronized transactions:

{"code":200,"status":true,"message":null,"response":{"count":121}}

If we want to query the transactions we will execute:

**INPUT:**

token: 

id\_site: 

**OUTPUT:** transactions

curl 'https://sync.paybook.com/v1/transactions?token=your\_token&id\_site=some\_id\_site'

And it will respond with an array of transactions as this:

{"id\_transaction":"573b8922234283ad738b45da","id\_user":"573a91a90b212a0e3e8b4596","id\_external":null,"id\_site":"56cf5728784806f72b8b456f","id\_site\_organization":"56cf4ff5784806152c8b4568","id\_site\_organization\_type":"56cf4f5b784806cf028b4569","id\_account":"573b8921234283ad738b4567","id\_account\_type":"546d4904df527d1844a2e18d","is\_disable":0,"description":"CREACIONES DE TECNOLOGIA AVANZADA DE MEXICO SA DE CV","amount":6834.93,"dt\_transaction":1461960603,"dt\_refresh":1463519574}