



## Forex Spread API v1

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## 1. Purpose

To provide the API end point information and examples of the web services available for Forex Spread API.

## 2. Glossary of Terms

Term	Meaning
Last Update Time	Timestamp, recording when the spot rate was last updated
Bid Rate	Foreign exchange spread to use for offer price calculation when placing offer against a live bid.
Offer Rate	Foreign exchange spread to use for bid price calculation when placing bid against a live offer.

## 3. Technical Standards

- Permitted users will be issued with a unique token (CLIENT\_KEY) and password (CLIENT\_SECRET) combination to control the access for all the web services covered under Exchange Integration.
- The web services will consume and produce both XML and JSON. The user can provide the content type in the request header. If the user does not provide any information, then the default content type will be JSON.
- The service supports ISO 8601.
- The service only support HTTPS protocol for client and server communications.
- The API will support the following methods:
  - GET for read operation
- Pretty printing for output readability only is supported if required
- Compression for bandwidth savings are used
- Authentication mechanism will be custom based on CLIENT\_KEY and CLIENT\_SECRET
- The APIs will be accessible at <https://api.liv-ex.com/> followed by their specific base URIs

## 4. Request Header

This information will be used to authenticate valid access to the REST API. Each user will have to provide the following information in the request header. Please note that the API expects the 4 headers as listed within this documentation and submitting a request with additional headers may lead to errors and/or failed responses.

### Parameter

Name	Mandatory	Description
CLIENT_KEY	Y	A valid GUID which will be unique for each user.
CLIENT_SECRET	Y	Password/Secret for the merchant's CLIENT_KEY.
ACCEPT	Y	Accept header is a way for a client to specify the media type of the response content it is expecting. The values for the content type will be application/json or application/xml.

		If no/invalid content type is found in the request, then JSON format will be used by default.
CONTENT-TYPE	Y for POST requests	Content-type is a way to specify the media type of request being sent from the client to the server. The values for the content type will be application/json or application/xml.  If no/invalid content type is found in the request, then JSON format will be used by default.

### Example header (JSON)

```
CLIENT_KEY: 12A34BC56-DE7F-89G0-H1J2345K678L
CLIENT_SECRET: dummy_password
ACCEPT: application/json
CONTENT-TYPE: application/json
```

### Invalid header (JSON response)

```
{
  "status": "Unauthorized",
  "statusCode": "401",
  "message": "Unauthorized",
  "internalErrorCode": null,
  "apiInfo": {
    "version": "1.0",
    "timestamp": 1550676412005,
    "provider": "Liv-ex"
  }
}
```

### Invalid header (XML response)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Response xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="https://aby-uat-api.liv-ex.com/v1 https://aby-uat-api.liv-
ex.com/schema/v1/services.xsd">
  <Status>Unauthorized</Status>
  <HttpCode>401</HttpCode>
  <Message>Unauthorized</Message>
  <InternalErrorCode xsi:nil="true"/>
  <ApiInfo>
    <Version>1.0</Version>
    <Timestamp>2019-02-20T15:28:48.623Z</Timestamp>
    <Provider>Liv-ex</Provider>
  </ApiInfo>
</Response>
```

## 5. API Listing

### 5.1 Forex Spread (GET method)

#### Description

This service can be used to retrieve merchant's Liv-ex spread rates in either JSON or XML response formats.

#### Automated trading

The Forex API was originally designed to keep prices for automation customers in sync with the Liv-ex system. When listing Liv-ex stock on their own e-commerce site, merchants may wish to display prices in other currencies. The Forex API will allow users to keep prices in line with Liv-ex's database of bids and offers.

An example use case is as follows:

- A merchant is listing Liv-ex offers through their own e-commerce platform through our automation APIs
- The user wishes to display stock in a currency other than GBP for example in EUR
- The merchant calls the offers API to receive a list of live offers from the exchange
- The merchant calls the forex API in order to convert and display the offers in euros on their site, in line with the currency conversion rate that Liv-ex uses
- A customer buys wine through the ecommerce site
- The forex API is called and the EUR/GBP Offer rate is used to convert the EUR price to a GBP bid price
- The Bid is placed against a live offer and the offer matches

Note: The currency rate is expected to vary more frequently than the prices of offers on the exchange. Hence it is safe to assume that calling the offers feed at regular intervals and using the Forex API to get live currencies when executing a trade will suffice for matching trades.

## Base URI

[data/v1/forexSpread](https://api.liv-ex.com/data/v1/forexSpread)

## Sample Response Body

The Account Users service will respond with HTTP Code 200 OK in a successful response to the GET request with the valid credentials provided within the request header.

## Response parameters

Name	Description
currency	Type: alphanumeric
lastUpdateTime	Type: alphanumeric, ISO 8601 Epoch time if JSON Example (JSON): 1549537950898 Example (XML): 2019-02-07T11:12:30
bidRate	Type: double
offerRate	Type: double

## JSON Response

The response is sent per request.

```
{
  "status": "OK",
  "statusCode": "200",
  "message": "Request completed successfully.",
}
```

```

"internalErrorCode": "R001",
"apiInfo": {
  "version": "1.0",
  "timestamp": 1562574359554,
  "provider": "Liv-ex"
},
"currencies": [
  {
    "currency": "GBP",
    "lastUpdateTime": null,
    "bidRate": 1,
    "offerRate": 1
  },
  {
    "currency": "EUR",
    "lastUpdateTime": 1562153695000,
    "bidRate": 1.10169904,
    "offerRate": 1.1284609600000002
  },
  {
    "currency": "USD",
    "lastUpdateTime": 1562153698000,
    "bidRate": 1.25825844,
    "offerRate": 1.26330156
  },
  {
    "currency": "CHF",
    "lastUpdateTime": 1562153700000,
    "bidRate": 1.2399152,
    "offerRate": 1.2448848
  },
  {
    "currency": "JPY",
    "lastUpdateTime": 1562153698000,
    "bidRate": 135.072813,
    "offerRate": 135.61418700000002
  },
  {
    "currency": "HKD",
    "lastUpdateTime": 1562153695000,
    "bidRate": 9.77684213,
    "offerRate": 9.816027870000001
  },
  {
    "currency": "SGD",
    "lastUpdateTime": 1562153698000,
    "bidRate": 1.70374568,
    "offerRate": 1.71057432
  }
],
"errors": null
}

```

### XML Response

The response is sent per request.

```

<Status>OK</Status>
<HttpCode>200</HttpCode>
<Message>Request completed successfully.</Message>
<InternalErrorCode>R001</InternalErrorCode>
<ApiInfo>
  <Version>1.0</Version>
  <Timestamp>2019-07-08T08:54:17.621+01:00</Timestamp>
  <Provider>Liv-ex</Provider>
</ApiInfo>

```

```

<currencies>
  <forexCurrency>
    <currency>GBP</currency>
    <lastUpdateTime xsi:nil="true"/>
    <bidRate>1.0</bidRate>
    <offerRate>1.0</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>EUR</currency>
    <lastUpdateTime>2019-07-03T12:34:55.000+01:00</lastUpdateTime>
    <bidRate>1.10169904</bidRate>
    <offerRate>1.1284609600000002</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>USD</currency>
    <lastUpdateTime>2019-07-03T12:34:58.000+01:00</lastUpdateTime>
    <bidRate>1.25825844</bidRate>
    <offerRate>1.26330156</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>CHF</currency>
    <lastUpdateTime>2019-07-03T12:35:00.000+01:00</lastUpdateTime>
    <bidRate>1.2399152</bidRate>
    <offerRate>1.2448848</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>JPY</currency>
    <lastUpdateTime>2019-07-03T12:34:58.000+01:00</lastUpdateTime>
    <bidRate>135.072813</bidRate>
    <offerRate>135.61418700000002</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>HKD</currency>
    <lastUpdateTime>2019-07-03T12:34:55.000+01:00</lastUpdateTime>
    <bidRate>9.77684213</bidRate>
    <offerRate>9.816027870000001</offerRate>
  </forexCurrency>
  <forexCurrency>
    <currency>SGD</currency>
    <lastUpdateTime>2019-07-03T12:34:58.000+01:00</lastUpdateTime>
    <bidRate>1.70374568</bidRate>
    <offerRate>1.71057432</offerRate>
  </forexCurrency>
</currencies>
<errors xsi:nil="true"/>
</forexSpreadResponse>

```

**XML response with invalid authentication**

```
<Status>Unauthorized</Status>
<HttpCode>401</HttpCode>
<Message>Unauthorized</Message>
<InternalErrorCode xsi:nil="true"/>
<ApiInfo>
  <Version>1.0</Version>
  <Timestamp>2019-07-08T09:27:26.395+01:00</Timestamp>
  <Provider>Liv-ex</Provider>
</ApiInfo>
</Response>
```

## 6. Response Codes

This section describes the response codes that will be returned by the Exchange Integration services.

Code	Message
R000	Request was unsuccessful
R001	Request completed successfully
R002	Request partially completed

### 6.1 HTTP Status codes

HTTP defines a bunch of meaningful status codes that can be returned from our API. These can be leveraged to help our API Merchants/consumers route their responses accordingly:

Code	Message
200 OK	Response to a successful GET, POST, PUT, DELETE. Can also be used for a POST that doesn't result in a creation.
201 Created	Response to a POST that results in a creation.
202 Accepted	The request has been accepted and will be processed later. It is a classic answer to asynchronous calls (for better UX or performances).
204 No Content	Response to a successful request that won't be returning a body (like a DELETE request)
400 Bad Request	The request is malformed, such as if the body does not parse
401 Unauthorized	When no and/or invalid authentication details are provided. Can also be used to trigger an auth popup if API is used from a browser



403 Forbidden	When authentication succeeded but authenticated user doesn't have access to the resource
404 Not Found	When a non-existent resource is requested
405 Method Not Allowed	When an HTTP method is being requested that isn't allowed for the authenticated user
406 Not Acceptable	Nothing matches the Accept-* Header of the request. As an example, you ask for an XML formatted resource, but it is only available as JSON.
409 Conflict	Indicates one or more supplied parameters are triggering a validation error. A relevant TR code should be returned in the response.
410 Gone	Indicates that the resource at this end point is no longer available. Useful as a blanket response for old API versions
415 Unsupported Media Type	If incorrect content type was provided as part of the request
422 Unprocessable Entity	Used for validation errors. Should be used if the server cannot process the entity, e.g. if an image cannot be formatted or mandatory fields are missing in the payload.
429 Too Many Requests	When a request is rejected due to rate limiting
500 Internal Server Error	The general catch-all error when the server-side throws an exception. The request may be correct, but an execution problem has been encountered at our end.