



An API Used for Calling the KB Exchange List Service

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AN API USED FOR CALLING THE KB EXCHANGE LIST SERVICE

As part of the Open Banking activity, Komerční banka provides a service for obtaining KB exchange rate information through direct queries on the **exchange-rates** resource issued by the exchange rate service REST API. This service provides the following information related to the KB exchange rate list:

The exchange rate list information gathering resource provides:

- Current KB exchange rate list – information concerning the exchange rate list published on the current day or the latest exchange rate list valid on the current day.
- Historical KB exchange rate list – information concerning the exchange rate lists valid on a specific day during last 3 years.
- Current KB exchange rate for a selected currency – information concerning the defined currency exchange rate valid on the current day.
- Historical KB exchange rate for a selected currency – information concerning the defined currency exchange rate valid on a specific day during last 3 years.

The information provided via API KB are available only in the Czech Language.

SCOPE OF PROVIDED INFORMATION

Komerční banka provides information on all the currencies published on www.kb.cz in the KB exchange rate list through API service calling in the following structure:

Attribute	Field description	Example	Data type
currencyISO	Three-letter code of specific currency according to ISO 4217	AUD	string (upper case)
currencyShortName	Currency short name	dolar	string
currencyFullName	Currency full name	australský dolar	string
country	Country of currency	Austrálie	string
countryISO	ISO code of country	AU	string
ratesValidityDate	Exchange rate list validity date	2017-10-10T05:00:00.000Z	string (date-time)
exchangeAmount	Amount of foreign exchange	1	integer
middle	KB middle rate	17.1126	number
cashBuy	Foreign exchange cash buying	16.6848	number
cashSell	Foreign exchange cash selling	17.5404	number

noncashBuy	Foreign exchange noncash buying	16.7789	number
noncashSell	Foreign exchange noncash selling	17.4463	number

INFORMATION FOR EXCHANGE-RATES RESOURCE CALLING

Complete url of the calling: <https://api.kb.cz/openapi/v1/exchange-rates>

After successful calling, the service will return the exchange rate list data depending on entered parameters.

If the date and time are specified in the query, the service will return the exchange rate list valid on the given day and time. If no exchange rate list was published on the given day, the latest published exchange rate list valid on that date will be returned. If no optional parameters have been entered, the latest published and valid exchange rate list will be returned.

Table 1 API parameters of the Exchange Rate List service

Name	Located in	Description	Required	Schema
x-request-id	header	External Request ID	No	string
ratesValidityDate	query	The date the currency conversion rates are valid for	No	string (date-time)
currencyISO	path	ISO code for the currency	No	string

*Note: The **x-request-id** parameter is an optional input of exchange rate list API calling. It uniquely identifies each particular query of a caller. The value of this parameter should therefore be generated randomly and the individual x-request-ids **should not be** identical for the same caller over a short time interval. The service returns this parameter to the calling system within the response headers.*

The response to API calling contains:

- Return http error code – see *Table 2: Return error* .
- Response headers sections with filled-in headers (such as general response headers: X-Original-HTTP-Status-Code, ... or service custom headers: x-request-id) – see *Fig. 1: Example of the exchange rate list calling request*

```
GET http://api.kb.cz/openapi/v1/exchange-rates HTTP/1.1
```

```
Accept-Encoding: gzip,deflate
```

```
x-request-id: 123456
```

```
Host: api.kb.cz
```

```
Connection: Keep-Alive
```

```
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)
```

- Fig. 2: Example of response headersReturn message body – see *Fig. 2: Example of response headers, and*

- *Fig. 4: Example of an error response to an unexpected value.*

Table 2: Return error codes

HTTP Error	Code meaning	Description
200	OK	Successful operation
400	PARAMETER_INVALID	Value of Parameter PARAMETER_NAME is wrong
400	UNKNOWN_CURRENCY	Unknown currency specified in parameter PARAMETER_NAME or exchange rate not available for specified date or rates list type
401	UNAUTHORIZED	Authentication information is missing or is invalid
404	RATE_LIST_NOT_FOUND	Exchange rate list not available for specified date
500	INTERNAL_ERROR	Unexpected error occurred

The exchange rate list service calling swagger is available on [Swagger \(JSON\)](#).

EXAMPLES OF THE EXCHANGE RATE LIST CALLING REQUEST / RESPONSE**Fig. 1: Example of the exchange rate list calling request**

```
GET http://api.kb.cz/openapi/v1/exchange-rates HTTP/1.1  
Accept-Encoding: gzip,deflate  
x-request-id: 123456  
Host: api.kb.cz  
Connection: Keep-Alive  
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)
```

Fig. 2: Example of response headers

```
HTTP/1.1 200 OK  
Date: Tue, 10 Oct 2017 11:30:37 GMT  
X-Original-HTTP-Status-Code: 200  
Content-Language: en-US  
Access-Control-Allow-Headers: authorization,Access-Control-Allow-Origin,Content-Type,SOAPAction  
Access-Control-Allow-Origin: *  
X-Request-Id: 123456  
Access-Control-Allow-Methods: GET  
Content-Type: application/json; charset=utf-8  
Keep-Alive: timeout=60, max=100  
Connection: Keep-Alive  
Transfer-Encoding: chunked  
X-Response-Id: urn:uuid:8629c8b2-d494-4c3e-b462-d2fb4d7f84c4
```

Fig. 3: Example of a response body

```
[{
  "exchangeRates": [
    {
      "currencyISO": "ATS",
      "currencyShortName": "šilink",
      "currencyFullName": "šilink",
      "country": "Rakousko",
      "countryISO": "AT",
      "ratesValidityDate": "2017-08-04T05:00:00.000Z",
      "exchangeAmount": "1",
      "middle": "1.892001",
      "cashBuy": "1.844698",
      "cashSell": "1.939296",
      "noncashBuy": "1.855672",
      "noncashSell": "1.928323"
    },
    .
    .
    .
    {
      "currencyISO": "USD",
      "currencyShortName": "dolar",
      "currencyFullName": "americký dolar",
      "country": "Spojené státy",
      "countryISO": "US",
      "ratesValidityDate": "2017-08-04T05:00:00.000Z",
      "exchangeAmount": "1",
      "middle": "21.9353",
      "cashBuy": "21.3869",
      "cashSell": "22.4836",
      "noncashBuy": "21.5075",
      "noncashSell": "22.363"
    }
  ]
}]
```

Fig. 4: Example of an error response to an unexpected value

```
{ "errors":  
  [  
    {  
      "error": "PARAMETER_INVALID",  
      "scope": "ratesValidityDate",  
      "message": "Value of Parameter ratesValidityDate is wrong"  
    }  
  ]  
}
```

```
{ "errors":  
  [  
    {  
      "error": "UNKNOWN_CURRENCY",  
      "scope": "currencyISO",  
      "message": "Unknown currency specified in parameter currencyISO or  
exchange rate not available for specified date or rates list type"  
    }  
  ]  
}
```

CALLING THE SERVICE

Information from the exchange rate list can be obtained by calling the predefined exchange-rates resources REST API by means of **GET method**, using:

1. Calling the resource from the browser address line
2. RESTful **addon** in the Internet browser
3. Command **curl** from the command line
4. **Application** for RESTful API calling (e.g. SoapUI, ...)

CALLING THE SERVICE FROM THE BROWSER ADDRESS LINE

You will enter and confirm the following commands (examples) in the address line of any Internet browser, respectively for:

CURRENT KB EXCHANGE RATE LIST

<https://api.kb.cz/openapi/v1/exchange-rates>

HISTORICAL KB EXCHANGE RATE LIST

<https://api.kb.cz/openapi/v1/exchange-rates?ratesValidityDate=2017-04-25T05%3A00%3A00.000Z>

CURRENT KB EXCHANGE RATE FOR A SELECTED CURRENCY

<https://api.kb.cz/openapi/v1/exchange-rates/USD>

HISTORICAL KB EXCHANGE RATE FOR A SELECTED CURRENCY

<https://api.kb.cz/openapi/v1/exchange-rates/USD?ratesValidityDate=2017-04-25T05%3A00%3A00.000Z>

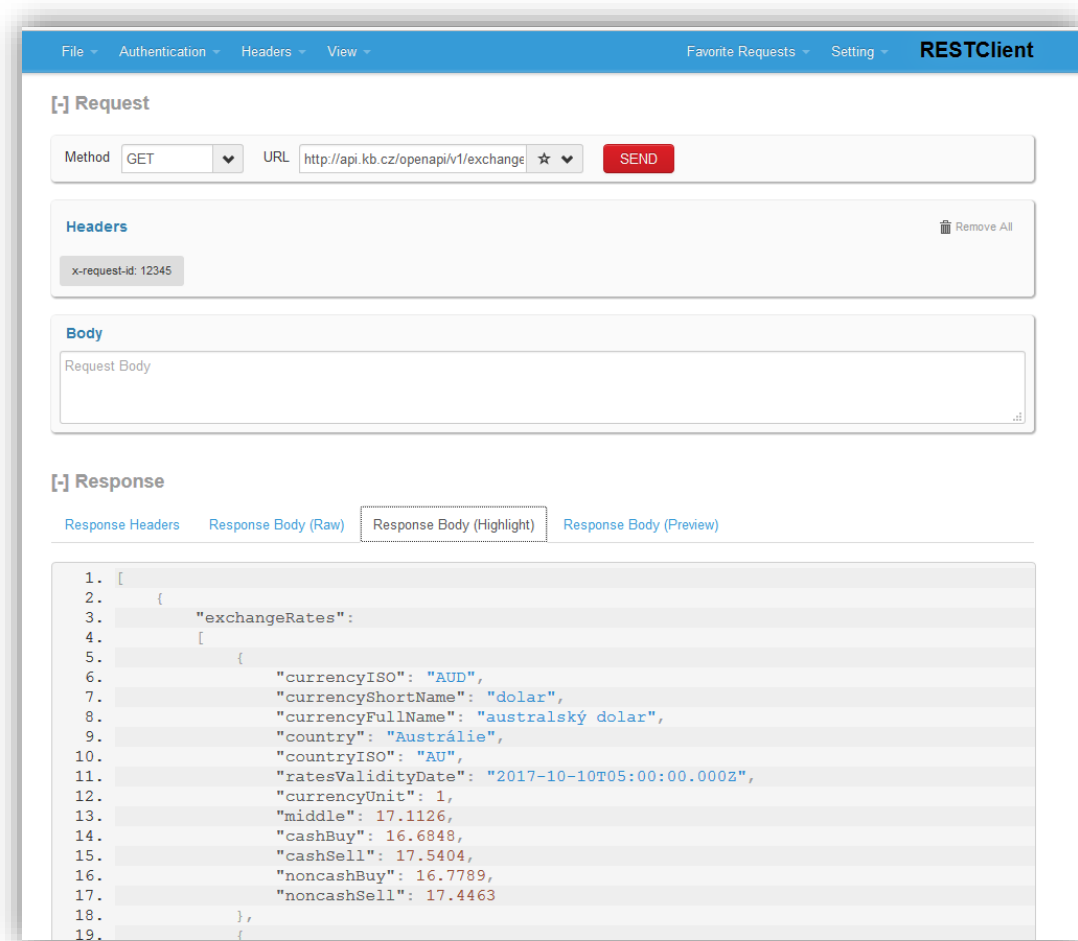
CALLING THE SERVICE FROM THE BROWSER'S RESTFUL ADDON**Procedure:**

1. Install RESTful addon into your browser.

Recommendation:

- **GOOGLE CHROME:** Install [Postman RESTful Client](#),
 - **MOZILLA FIREFOX, SAFARI:** Install [RESTClient](#) or another RESTful Client addon for the selected browser.
2. Fill in the required parameters for resource calling in the installed REST API client. All the allowed API parameters are listed in ***Chyba! Nenalezen zdroj odkazů.***ers.

Fig. 5: Example of calling the service and filling-in the parameters



The screenshot displays the RESTClient interface. At the top, there are menu items: File, Authentication, Headers, View, Favorite Requests, Setting, and RESTClient. The main area is divided into two sections: Request and Response.

Request Section:

- Method: GET
- URL: http://api.kb.cz/openapi/v1/exchange
- Buttons: SEND (red), and a star icon for favorites.
- Headers: A single header is listed: x-request-id: 12345. A Remove All button is present.
- Body: A text area labeled "Request Body" is currently empty.

Response Section:

- Response Headers: (tab selected)
- Response Body (Raw): (tab selected)
- Response Body (Highlight): (tab selected)
- Response Body (Preview): (tab selected)

The response body is shown in a code editor with line numbers 1 through 19. The JSON data is as follows:

```
1. [
2.   {
3.     "exchangeRates":
4.     [
5.       {
6.         "currencyISO": "AUD",
7.         "currencyShortName": "dolar",
8.         "currencyFullName": "australský dolar",
9.         "country": "Austrálie",
10.        "countryISO": "AU",
11.        "ratesValidityDate": "2017-10-10T05:00:00.000Z",
12.        "currencyUnit": 1,
13.        "middle": 17.1126,
14.        "cashBuy": 16.6848,
15.        "cashSell": 17.5404,
16.        "noncashBuy": 16.7789,
17.        "noncashSell": 17.4463
18.      },
19.    ]
  }
```

CALLING THE SERVICE FROM THE COMMAND LINE BY CURL, AS FOLLOWS:

CURRENT KB EXCHANGE RATE LIST

```
curl -X GET --header 'Accept: application/json' --header 'x-request-id: 12345'  
'https://api.kb.cz/openapi/v1/exchange-rates'
```

HISTORICAL KB EXCHANGE RATE LIST

```
curl -X GET --header 'Accept: application/json' --header 'x-request-id: 12345'  
'https://api.kb.cz/openapi/v1/exchange-rates?ratesValidityDate=2017-04-25T05%3A00%3A00.000Z'
```

CURRENT KB EXCHANGE RATE FOR A SELECTED CURRENCY

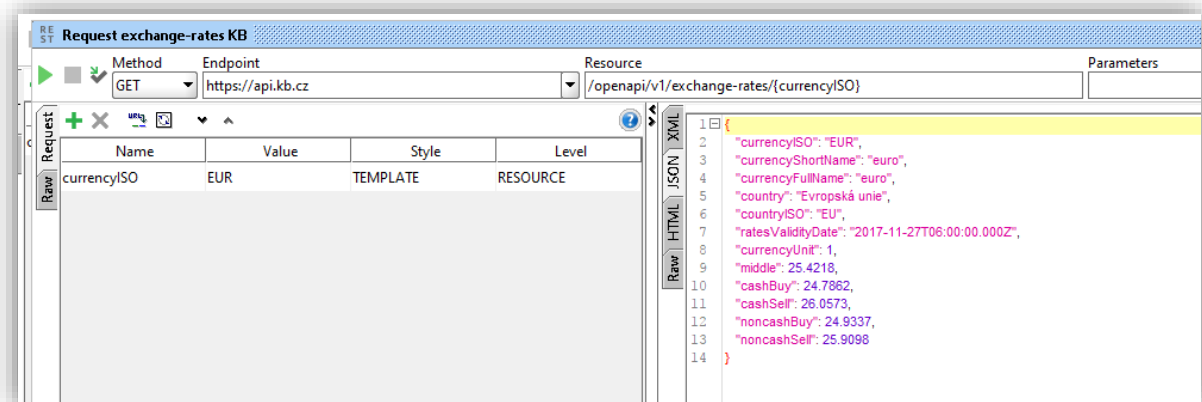
```
curl -X GET --header 'Accept: application/json' --header 'x-request-id: 12345'  
'https://api.kb.cz/openapi/v1/exchange-rates/USD'
```

HISTORICAL KB EXCHANGE RATE FOR A SELECTED CURRENCY

```
curl -X GET --header 'Accept: application/json' --header 'x-request-id: 12345'  
'https://api.kb.cz/openapi/v1/exchange-rates/USD?ratesValidityDate=2017-04-  
25T05%3A00%3A00.000Z'
```

CALLING THE SERVICE VIA A SPECIALISED APPLICATION FOR RESTFUL API CALLING

Fig. 6: Example of exchange-rates calling in SoapUI



SUPPORT

In case of any problems, please contact api@kb.cz.