



FEDERAL INLAND REVENUE SERVICE



Version 1.2



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Document status

Version	Date	What was changed
1.0	2017/06/01	First release of the document
1.1	2017/12/06	Added: Attributes table Playground for online testing section Support section
1.2	2018/7/5	Added: New playground for development/testing



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FIRS REST WEB SERVICE INTERFACE

The FIRS (Federal Inland Revenue Service, Nigeria) REST API allows you to send data to the FIRS central server. Since the API is based on REST principles, it's very easy to write and test applications. You can use pretty much any HTTP client in any programming language to interact with the API. Our examples use Chrome extension ARC (Advanced REST client).

BASE URL

All URLs referenced in the documentation have the following base:

Development / For testing

[*https://api-dev.i-fis.com*](https://api-dev.i-fis.com)

Production

[*https://firs-api.i-fis.com*](https://firs-api.i-fis.com)

The FIRS REST API is served over **HTTPS**. To ensure data privacy, unencrypted **HTTP is not supported**.



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AUTHENTICATION

HTTP requests to the REST API are protected with OAuth 2.0 (OAuth 2.0 Framework with Bearer Token Usage).

Send POST request to:

Development / For testing

<https://api-dev.i-fis.com/oauth2/token>

Production

<https://firs-api.i-fis.com/oauth2/token>

Register at <https://i-fis.com.ng/getting-started/> to get credentials for the api.

Request example in Chrome ARC:

```
curl JS PHP

Request:

$ curl -X POST -d
"client_id=testclient&client_secret=testpass&grant_type=password&username=admin&password=admin123"
https://firs-api.i-fis.com/oauth2/token

Response:

{"access_token":"7856444b9e5cc5a9d57f75c989ff1b0140ed1340",
"expires_in":86400,
"token_type":"Bearer",
"scope":null,
"refresh_token":"124c82b2c8d72b6aef49f7d0f1b221d27c0c71ca"}
```



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BILLS/REPORTS

Use this HTTP requests for sending bill data.
Send POST request to:

Development / For testing

<https://api-dev.i-fis.com/v1/bills/report>

Production

<https://firs-api.i-fis.com/v1/bills/report>



Attributes (Request)

ATTRIBUTE NAME	FORMAT	TYPE	ENUM	MAXLENGTH	DESCRIPTION	EXAMPLE
“vat_number”	“string”	“string”		50		“1234567890”
“business_place”	“string”	“string”		50		“AABBCC”
“business_device”	“string”	“string”		50		“1”
“bill_number”	“int32”	“integer”				“1”
“bill_datetime”	“date-time”	“string”			“Format: ISO8601 YYYY-dd-mmTH:i:s”	“2020-01-01T12:12:12”
“total_value”	“number”	“number”				“125.00”
“payment_type”	“string”	“string”	{“C”, “T”, “K”, “D”, “P”, “O”}		C – cash T – Bank transfer K – credit card D – debit card P – Post payment (credit) O – Other	
“security_code”	“string”	“string”			“MD5(secretKey + vat_number + business_place + business_device + bill_number + bill_datetime + total_value)”	
“rate”	“number”	“number”			“Tax Rate Percentage”	“25.00”
“base_value”	“number”	“number”			“Tax Base Value”	“100.00”
“value”	“number”	“number”			“Tax Value”	“25.00”

Attributes (Response)

created_at – datetime of creating in ISO 8601 format (UTC)

payment_code:

- UID (Unique Identifier) signed code from API
- “O” – Other (mixed payments and etc.)



Request example in Chrome ARC:

> https://firs-api.i.fis.com/v1/bills/report

GET POST PUT DELETE PATCH Other methods application/json

Raw headers Headers form Headers sets

Content-Type: application/json
Authorization: Bearer 9ba48004ae916e9609f0373d53bb67e077d63542

Raw payload Data form

```
{
  "bill": {
    "bill_datetime": "2017-09-14T15:52:44",
    "bill_number": "16",
    "business_device": "1",
    "business_place": "BAR",
    "payment_type": "C",
    "security_code": "464e98b1721f85d2f37857f422b5c333",
    "total_value": "54433.00",
    "vat_number": "NG123123"
  },
  "bill_taxes": [
    {
      "base_value": "2592",
      "rate": "5",
      "value": "51840"
    }
  ]
}
```

200 OK 203.00 ms

Raw JSON



```
{
  "payment_code": "9b1f6ff2-12e4-560f-ba97-10451f6a8b86",
  "created_at": "2017-09-15T07:35:58"
}
```

SIGNING THE DATA

For signing the data use the MD5 algorithm.

API uses two hash codes:

SID – Security Identifier

UID – Unique Identifier

POS software generates the SID and API generates the UID.



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SID

client_secret – variable from authentication

vat_number – Unique ID of the company

business_place – Short code of business place (given after registration)

business_device – serial number of POS device in a business place (given after registration)

bill_number – serial number of the bill

bill_datetime – bill's datetime uses **ISO 8601** format (UTC)

total_value – total amount of the bill

Formula:

PHP

JS

```
$buffer = $client_secret;  
  
$buffer .= $vat_number;  
  
$buffer .= $business_place;  
  
$buffer .= $business_device;  
  
$buffer .= $bill_number;  
  
$buffer .= $bill_datetime;  
  
$buffer .= $total_value;  
  
$security_code = md5($buffer);
```



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PHP

JS

```
// environment: React Native
// npm package: https://www.npmjs.com/package/js-md5

var md5 = require('js-md5');

var buffer = client_secret;

buffer += vat_number;

buffer += business_place;

buffer += business_device;

buffer += bill_number;

buffer += bill_datetime;

buffer += total_value;

var security_code = md5(buffer);
```



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PLAYGROUND FOR ONLINE TESTING

The Swagger/OpenAPI Specification* :

<https://api-dev.i-fis.com/doc>

* The OpenAPI Specification, originally known as the Swagger Specification, is a specification for machine-readable interface files for describing, producing, consuming, and visualizing RESTful Web services.[1] A variety of tools can generate code, documentation and test cases given an interface file. Development of the OpenAPI Specification (OAS) is overseen by the Open API Initiative, an open source collaborative project of the Linux Foundation. Source: [Wikipedia](#)



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SUPPORT

For any information about integration and software features, contact our support team:
support@i-fis.com.ng