

# REST API of the RESTifier for SAP

The RESTifier provides a REST interface. The supported content type for results and requests is JSON (application/json).

## Execute BAPI function

```
GET /sap/:functionName?parameter1=value1[&...][&callback=clientCallback]
POST /sap/:functionName?[callback=clientCallback]
```

If the BAPI function name as only simple parameters then both GET and POST can be used. If the BAPI function has tables or structures as input parameter only POST can be used. For POST the body must be a JSON object with all parameters as properties and Content-Type must be application/json.

Parameter	Description
<b>functionName</b>	BAPI function name. Slash (/) must be encoded as tilde (~).
<b>parameter1</b>	BAPI function parameters with value. The parameters names and types can be explored with /sap/:functionName/metadata.
<b>callback</b>	<a href="#">JSON-P</a> callback

## Example for executing a BAPI

The BAPI function is called with GET.

```
curl http://localhost:3000/sap/ZGETCUSTOMERDETAILS?PARTNERNUMBER=0000008889
```

The same BAPI function can also be called with POST.

```
curl -X POST -H "Content-Type: application/json" -d '{"PARTNERNUMBER": "0000008889"}' 'http://localhost:3000/sap/ZGETCUSTOMERDETAILS'
```

## Response

```
{
  "result": {
    "CITY": "SPRINGFIELD 07081",
    "COUNTRY": "US",
    "DISTRICT": "UNION",
    "HOUSENUMBERSTREET": "12 BROADWAY",
    "NAME": "John Taylor",
    "POSTALCODE": "07081",
    "PARTNERNUMBER": "0000008889"
  },
  "self_url": "http://localhost:3000/sap/ZGETCUSTOMERDETAILS?PARTNERNUMBER=0000008889"
}
```

Per default, the RESTifier trims the response fields of whitespaces and empty data. If you need the response untrimmed, you can add ~noclean as a query parameter to your request. ~noclean is a comma-separated, multi-value parameter and allows for the following values:

Value	Description
<b>whitespace</b>	Do not trim whitespaces at all.
<b>empty-values</b>	Keep simple types that are empty (like empty strings).

### On this Page:

- [Execute BAPI function](#)
  - [Example for executing a BAPI](#)
  - [Response](#)
  - [Exception](#)
- [Get BAPI function signature](#)
  - [Example for getting metadata](#)
- [Find BAPI function /sap/functions](#)
  - [Example /sap/functions](#)
- [Migrating from version 0.3.2 and below](#)

<b>nulls</b>	Keep fields that are NULL.
<b>empty-objects</b>	Keep objects that do not contain any data.

Call with GET:

```
curl http://localhost:3000/sap/ZGETCUSTOMERDETAILS?
PARTNERNUMBER=0000008889&~noclean=whitespace,empty-values
```

Call with POST:

```
curl -X POST -H "Content-Type: application/json" -d '{"PARTNERNUMBER": "
0000008889"}' 'http://localhost:3000/sap/ZGETCUSTOMERDETAILS?
~noclean=whitespace,empty-values'
```

## Exception

If you call a RFC function instead of a BAPI, an exception on the SAP server can happen. In this case you get HTTP status **502** and the following response:

Result	Type	Description
<b>error</b>	Number	HTTP status code
<b>message</b>	String	SAP error description
<b>rfcErrorInfo</b>	Object	Details of the error
rfcErrorInfo. <b>code</b>	Number	Return value of last function from SAP client
rfcErrorInfo. <b>group</b>	Number	SAP error group
rfcErrorInfo. <b>key</b>	String	SAP error key or exception
rfcErrorInfo. <b>abapMsgClass</b>	String	SAP ABAP message ID, or class
rfcErrorInfo. <b>abapMsgType</b>	String	SAP ABAP message type, e.g. 'E', 'A' or 'X'
rfcErrorInfo. <b>abapMsgNumber</b>	String	SAP ABAP message number
rfcErrorInfo. <b>abapMsgV1</b>	String	SAP ABAP message details field 1, corresponds to SY-MSGV1
rfcErrorInfo. <b>abapMsgV2</b>	String	SAP ABAP message details field 2, corresponds to SY-MSGV2
rfcErrorInfo. <b>abapMsgV3</b>	String	SAP ABAP message details field 3, corresponds to SY-MSGV3
rfcErrorInfo. <b>abapMsgV4</b>	String	SAP ABAP message details field 4, corresponds to SY-MSGV4
<b>self_url</b>	String	URL to this call

Empty elements of **rfcErrorInfo** will be suppressed. Find below an example response.

```
{
  "error": 502,
  "message": " Number:000",
  "rfcErrorInfo": {
    "code": 5,
    "group": 1,
    "key": "DIV_BY_ZERO",
    "abapMsgType": "",
    "abapMsgNumber": "000"
  },
  "self_url": "http://sap.e2e.ch/sap/Z_TEST_EXCEPTION"
}
```

# Get BAPI function signature

```
GET /sap/:functionName/metadata
```

Parameter	Description
functionName	BAPI function name. Slash (/) must be encoded as tilde (~).

The result is of type JSON with these properties.

Name	JavaScript Type	Description
functionName	String	Array of function descriptions
metadata	Object	<a href="#">JSON Schema</a> with additional properties.
error	String	Error description

An meta objects has these properties.

Property	JavaScript Type	Description
title	String	Name of the object or property.
type	String	JavaScript type.
length	Number	Length of a simple type or structure.
description	String	Description of parameters from SAP. Can be empty.
sapType	String	Native SAP type.
sapDirection	String	Input or output parameter. RFC_IMPORT   RFC_EXPORT   RFC_CHANGING   RFC_TABLES
sapTypeName	String	Name of a structure or name of a structure of a table.
dbTable	String	Name of the SAP database table
dbTableField	String	Field of the SAP database table
label	String	Short description

## Example for getting metadata

Get description of BAPI function STFC\_STRING.

```
curl http://localhost:3000/sap/ZGETCUSTOMERDETAILS/metadata
```

```
{
  "error": null,
  "metadata": {
    "title": "Signature of SAP RFC function ZGETCUSTOMERDETAILS",
    "type": "object",
    "properties": {
      "PARTNERNUMBER": {
        "type": "string",
        "length": "10",
        "sapType": "RFCTYPE_CHAR",
        "description": "Character Field Length = 10",
        "sapDirection": "RFC_IMPORT",
        "label": "Character Field Length = 10",
        "title": "PARTNERNUMBER"
      }
    }
  },
  "functionName": "ZGETCUSTOMERDETAILS",
  "exec_url": "http://localhost:3000/sap/ZGETCUSTOMERDETAILS{?callback}",
  "self_url": "http://localhost:3000/sap/ZGETCUSTOMERDETAILS/metadata"
}
```

## Find BAPI function /sap/functions

```
GET /sap/functions/:searchTerms[:pageNumber]&[description=1]
```

Parameter	Description
<b>searchTerms</b>	One or more parts of BAPI function name. Several terms should be separated by a URL encoded space.
<b>pageNumber</b>	Which result page should be returned.
<b>description=1</b>	The searchTerms will also be used to search in BAPI function descriptions.

The result is of type JSON with these properties.

Property	JavaScript Type	Description
<b>functionList</b>	Array	Array of function descriptions
<b>currentPage</b>	Number	The current result page. Result is divided into pages. Each page has up to 25 entries.
<b>totalPages</b>	Number	Total count of result pages.
<b>error</b>	String	Error description

An object in array **functionList** has these properties.

Property	JavaScript Type	Description
<b>FUNCNAME</b>	String	Function name
<b>GROUPNAME</b>	String	Group name
<b>APPL</b>	String	Application to which function module is assigned
<b>HOST</b>	String	Remote host (CPIC)
<b>STEXT</b>	String	Function description

## Example /sap/functions

Search for **customer** and get the first 25 functions.

```
curl http://localhost:3000/sap/functions/customer
```

```
{
  "functionList": [
    {
      "FUNCNAME": "/DSD/ME_CR_CUSTOMERCPD",
      "GROUPNAME": "/DSD/ME_SYNCBO",
      "APPL": "",
      "HOST": "",
      "STEXT": ""
    },
    // ... cut of functions
    {
      "FUNCNAME": "BAPI_CUSTOMEREXPINV_GETLIST",
      "GROUPNAME": "2144",
      "APPL": "W",
      "HOST": "",
      "STEXT": "Agency Business: BAPI - Determine Detailed Data for
Expenses Settlement"
    }
  ],
  "error": null,
  "self_url": "http://localhost:3000/sap/functions/customer",
  "first_url": "http://localhost:3000/sap/functions/customer",
  "last_url": "http://localhost:3000/sap/functions/customer/8"
}
```

Search for **customer** and/or **get** in function name and description. Return the 26th-50th (2nd page) functions.

```
curl 'http://localhost:3000/sap/functions/customer%20get/2?description=1'
```

```

{
  "functionList": [
    {
      "FUNCNAME": "BAPI_CUSTOMEREXPINV_GETLIST",
      "GROUPNAME": "2144",
      "APPL": "W",
      "HOST": "",
      "STEXT": "Agency Business: BAPI - Determine Detailed Data for
Expenses Settlement"
    },
    // ... cut of functions
    {
      "FUNCNAME": "BAPI_SERVICENOTIFICAT_GETLIST",
      "GROUPNAME": "IWWW",
      "APPL": "I",
      "HOST": "",
      "STEXT": "Select service notifications according to customer or
contact person"
    }
  ],
  "error": null,
  "self_url": "http://localhost:3000/sap/functions/customer%20get/2?
description=1",
  "next_url": "http://localhost:3000/sap/functions/customer%20get/3?
description=1",
  "previous_url": "http://localhost:3000/sap/functions/customer%20get/1?
description=1",
  "first_url": "http://localhost:3000/sap/functions/customer%20get?
description=1",
  "last_url": "http://localhost:3000/sap/functions/customer%20get/5?
description=1"
}

```

## Migrating from version 0.3.2 and below

Change in endpoints:

Old endpoint	New endpoint
/sap/exec/:functionName	/sap/:functionName
/sap/metadata/:functionName	/sap/:functionName/metadata
/sap/findFunction/:searchTerms	/sap/functions/:searchTerms

Changes in response:

- Addition of \*\_url properties - this should require no changes to the clients
- The result of a BAPI call has been moved to "result" property of the response.
- Properties "currentPage" and "totalPages" are no longer present in function search results.