Technical Articles

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ABAP OpenAPI Client Generation in ABAP

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The OpenAPI specification is a way to formally describe the services exposed by REST endpoints. To enforce design by contract(APIs), the specification is typically automatically turned into code in the client system, so the boring parts are hidden from the application developer, and the syntax checker can help to remind the developer when the contract is changed.

This client generation has long been a missing part in the ABAP ecosystem, and I'm happy to announce abap-openapi-client which is an open source OpenAPI client generator in ABAP 🙂

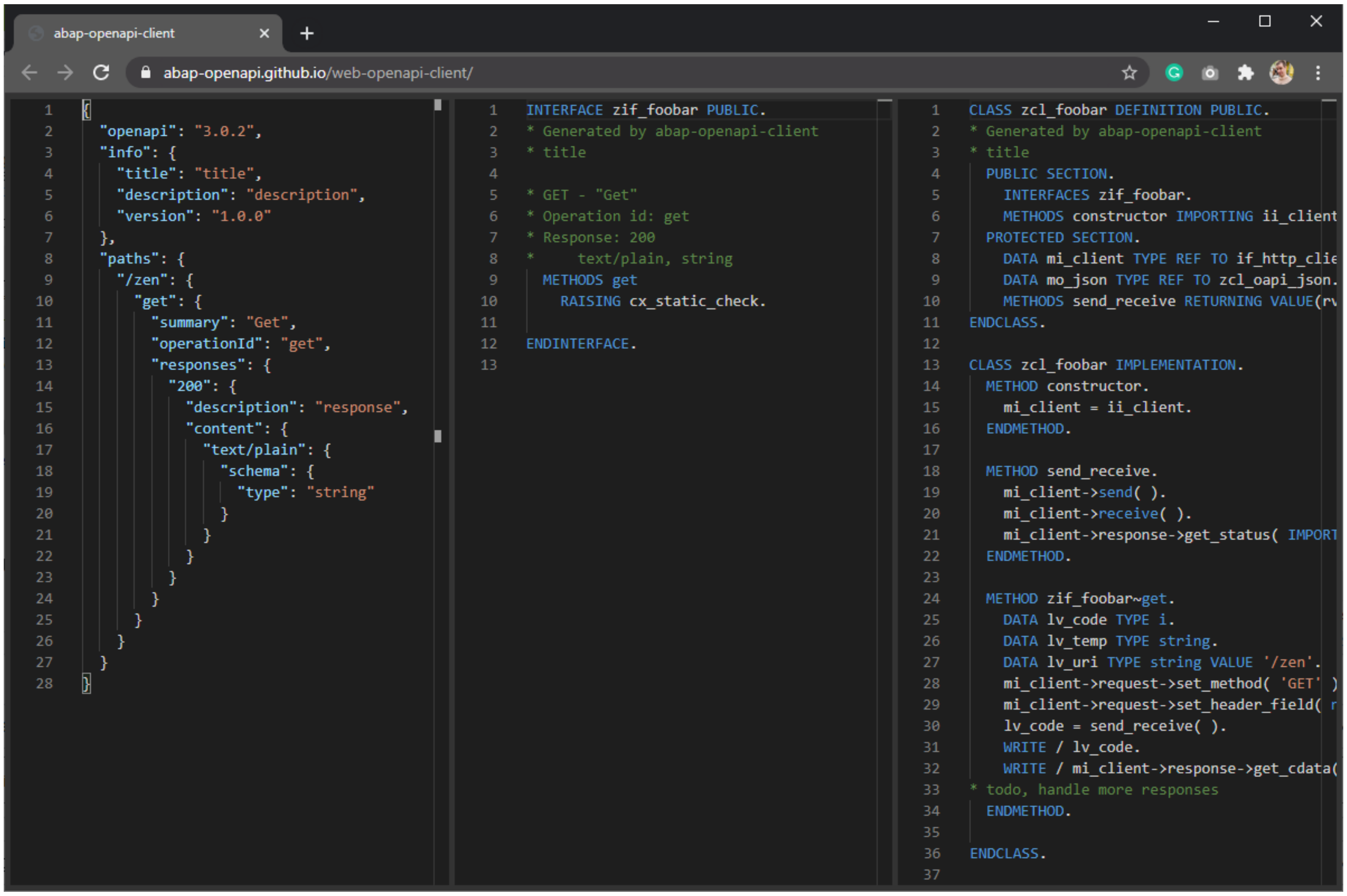
Why ABAP?

Both the code generation and the actual client code is ABAP. The code generation could have been in a different language, but to encourage ABAP developers to help with the ABAP generation, I find it important to have the generation in the same language.

Much of the code is just simple concatenation, which all(?) ABAP developers can help to evolve,

```
 LOOP AT ms_specification-operations INTO ls_operation WHERE deprecated = abap_false.
  rv_abap = rv_abap &&
    |  METHOD { ms_input-interface_name }~{ ls_operation-abap_name }.\n| &&
    operation_implementation( ls_operation ) &&
    |  ENDMETHOD.\n\n|.
ENDLOOP.
```

Another feature is to run the client generation in the browser! I.e. the client generation code does not require installation into an ABAP system to run,



```
{
  "openapi": "3.0.2",
  "info": {
    "title": "title",
    "description": "description",
    "version": "1.0.0"
  },
  "paths": {
    "/zen": {
      "get": {
        "summary": "Get",
        "operationId": "get",
        "responses": {
          "200": {
            "description": "response",
            "content": {
              "text/plain": {
                "schema": {
                  "type": "string"
                }
              }
            }
          }
        }
      }
    }
  }
}
```

```
INTERFACE zif_foobar PUBLIC.
* Generated by abap-openapi-client
* title

* GET - "Get"
* Operation id: get
* Response: 200
*     text/plain, string
  METHODS get
    RAISING cx_static_check.

ENDINTERFACE.
```

```
CLASS zcl_foobar DEFINITION PUBLIC.
* Generated by abap-openapi-client
* title
  PUBLIC SECTION.
    INTERFACES zif_foobar.
    METHODS constructor IMPORTING ii_client
  PROTECTED SECTION.
    DATA mi_client TYPE REF TO if_http_clie
    DATA mo_json TYPE REF TO zcl_oapi_json.
    METHODS send_receive RETURNING VALUE(rv
ENDCLASS.

CLASS zcl_foobar IMPLEMENTATION.
  METHOD constructor.
    mi_client = ii_client.
  ENDMETHOD.

  METHOD send_receive.
    mi_client->send( ).
    mi_client->receive( ).
    mi_client->response->get_status( IMPORT
  ENDMETHOD.

  METHOD zif_foobar~get.
    DATA lv_code TYPE i.
    DATA lv_temp TYPE string.
    DATA lv_uri TYPE string VALUE '/zen'.
    mi_client->request->set_method( 'GET' )
    mi_client->request->set_header_field( r
    lv_code = send_receive( ).
    WRITE / lv_code.
    WRITE / mi_client->response->get_cdata(
* todo, handle more responses
  ENDMETHOD.

ENDCLASS.
```

This works by transpiling the ABAP code to JavaScript.

CI/CD Setup