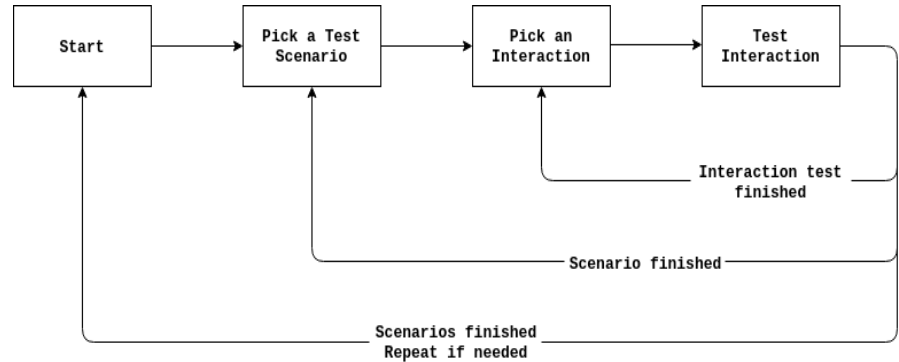TUM

WoT TestBench

WoT TestBench framework tests a Thing based on its Thing Description.

Core Test Flow

Test Bench Options

- repetition value repeats complete test flow

- scenario value repeats with different data

- test interaction

  • property
  • action
  • event (not implemented yet)

Thing under Test (TuT) Thing Description

```json
{
  "@context": ["https://w3c.github.io/wot/w3c-wot-td-context.jsonld"],
  "name": "mything",
  "id": "urn:dev:wot:com:example:servient:myThing",
  "base": "http://localhost:8081/mything",
  "properties": {
    "testobject": {
      "type": "object",
      "writable": true,
      "properties": {
        "brightness": {"type": "number","minimum": 0.0,"maximum": 100.0},
        "status": {"type": "string"}
      }
      "forms": [{"href":"/properties/testobject","mediaType": "application/json"}]
    },
    "temp": {
      "type": "number",
      "observable": true,
      "writable": false,
      "forms": [{"href":"/properties/temp","mediaType": "application/json"}]
    }
  },
  "actions": {
    "settestarray": {
      "input": {"type": "array", "items": {"type": "number"}},
      "forms": [{"href":"http://localhost:8081/mything/actions/settestarray","mediaType": "application/json"}],
      "output": {"type": "array", "items": {"type": "number"}}
    }
    "gettemp": {
      "label": "get temp value",
      "forms": [{"href": "/actions/gettemp","mediaType": "application/json"}],
      "output": {"type": "number"}
    }
  }
}
```

Thing Description Testing

Test Property

read property

validate response

check if writable:

    create & validate & write property with request

    read property, validate & compare response

Test Action

create request (only possible if action has input)
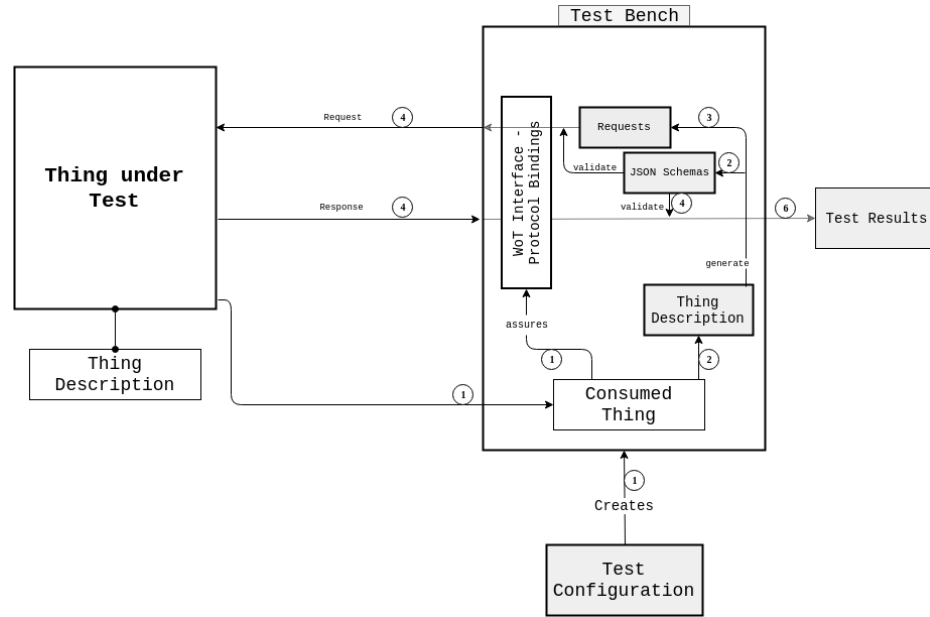
request validation

invoke action

checks for output

validate response

Current TestBench Status

Features:

- reads configuration file

- reads & consumes TuT Thing Description

- invokes interactions in a TuT

  - generates fake data for requests (json-schema-faker)
  - validates responses with respect to JSON Schema

- creates test report

WoT TestBench Demo

Github: https://github.com/jplaui/testbench

Documentation can be found in the Github README.md

Questions ?