cf-swagger

giving CF APIs their swagger back!

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v0.7.0
September 16th, 2015

agenda

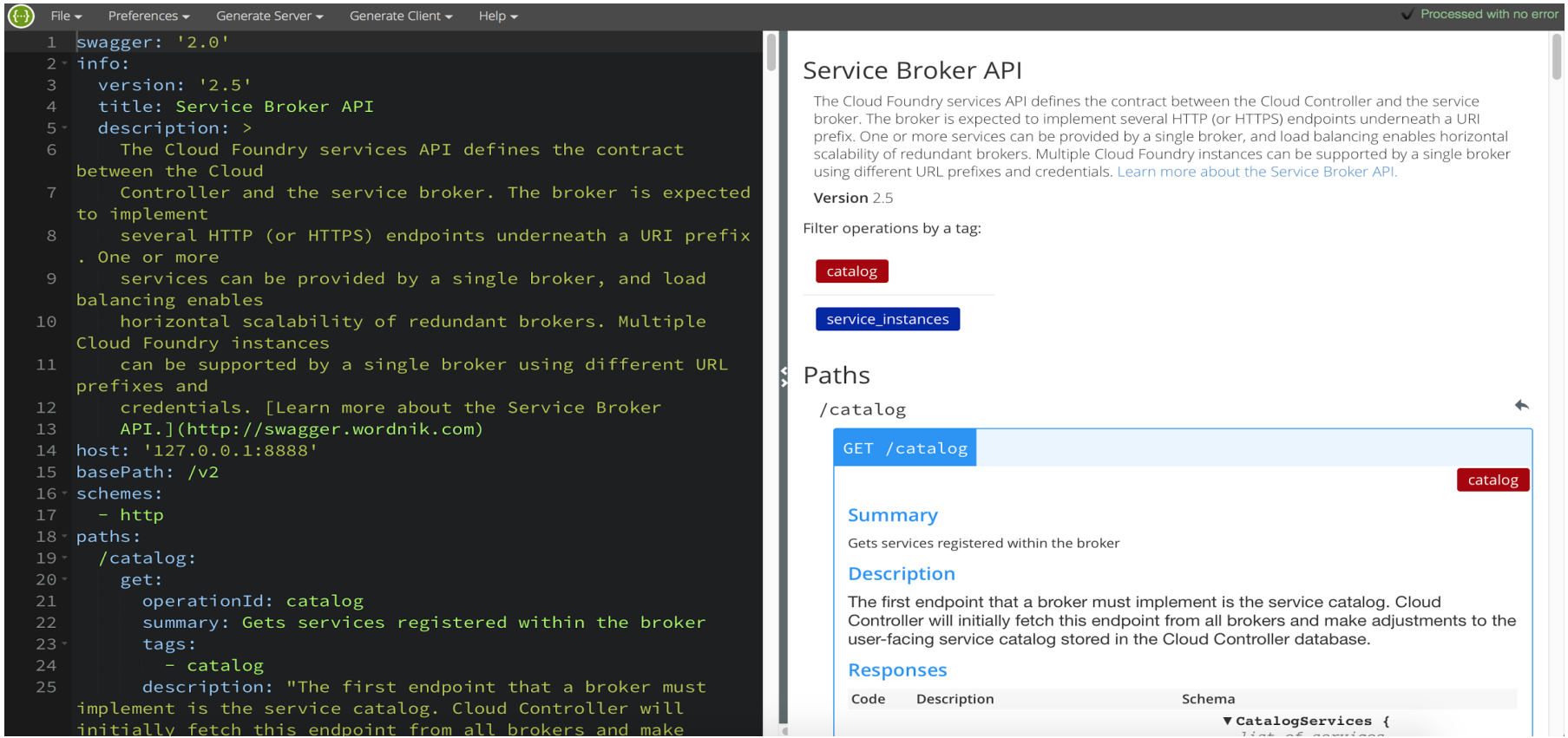
- what is swagger?
- what part of CF could use swagger?
- CF Service Broker APIs
  - docs,
  - server, clients,
  - tests and TCK
- value of TCK survey results
- what next?

what is swagger?

- OSS API description language and tools
- describe REST APIs (in JSON/YAML)
- Use OSS tooling to generate
  - API docs
  - code artifacts, e.g., client and server stubs
- Flexible, customizable, and OSS
  - growing number of companies using

MORNINGSTAR apigee PayPal Microsoft SMARTBEAR

what is swagger?: interactive editor



what is swagger?: spec details

```yaml
swagger: '2.0'
info:
  version: "2.5"
  title: Service Broker API
  description: |
   The Cloud Foundry services API defines the contract betweer
host: localhost
basePath: /v2
schemes:
  - http
paths:
 /catalog:
  get:
    operationId: catalog
    summary: Gets services registered within the broker
    tags:
      - catalog
    description: |
     The first endpoint that a broker must implement is the se
    produces:
        - application/json
    responses:
      "200":
        description: successful operation
        schema:
          type: array
          items:
            $ref: "#/definitions/Services"
      "400":
        description: Invalid status value
```

```yaml
/service_instance/{instance_id}:
 parameters:
  - $ref: "#/parameters/instance_id"
 put:
  operationId: create_service_instance
  produces:
   - application/json
  consumes:
   - application/json
  tags:
   - service_instance
  description: When the broker receives a provision request f
  summary: Provisions a service instance
  parameters:
   - name: service
     required: true
     description: Service information.
     in: body
     schema:
      type: object
      $ref: "#/definitions/Service"

  responses:
     "201":
      description: Service instance has been created. The exp
      schema:
       type: object
       $ref: "#/definitions/Dashbord_url"
     "200":
      description: May be returned if the service instance al
      schema:
       type: object
       $ref: "#/definitions/Dashbord_url"
     "409":
      description: Should be returned if the requested servic
      schema:
       type: object
       $ref: "#/definitions/Empty"
```

what is swagger? (*cont.*)

CLOUD FOUNDRY

Demo 1

1. swagger editor
2. swagger description for CF service brokers
3. generated API docs

cf-swagger

1. describe all CF APIs (eventually)
   - CF services: broker APIs
   - CF Cloud Controller: v3
   - UAA APIs
2. generate API docs
3. generate API client and servers (stubs)
4. generate test suites for API servers
5. generate Test Compatibility Kits

cf-swagger: service broker APIs

- API docs
- server generation
- extending the swagger spec
- prototypes for
  - unit and integration tests generation
  - Test Compliance Kit (TCK) generation

cf-swagger: why a TCK?

- some CF APIs are “plugins” or “extensions”
  - designed to allow many (1K+) providers
  - heterogeneous supporting lots of versions
  - tests are templatized-able and tedious
- TCK is meant for
  - verifying compliance level of broker
  - tell you what part of spec is not supported

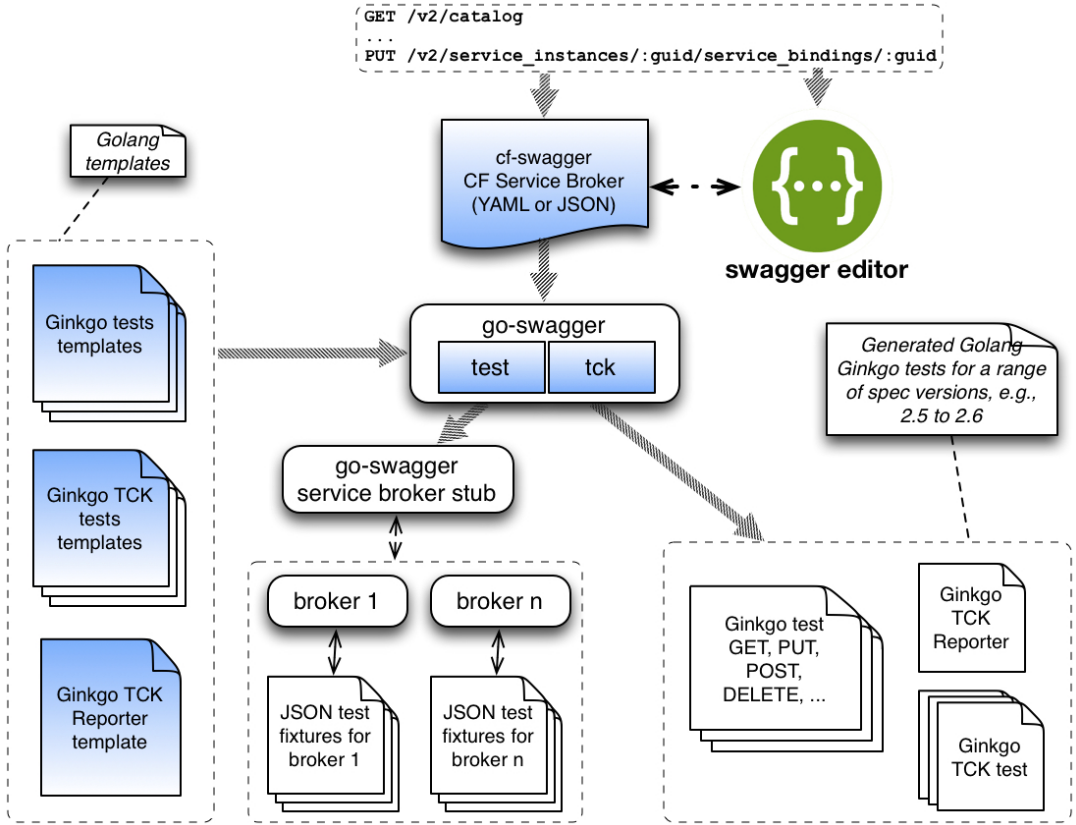
cf-swagger: spec extensions

```
167        "/service_instances/{instance_id}/service_bindings/{binding_id}": {
168            "parameters": [{
169                "$ref": "#/parameters/instance_id"
170            }, {
171                "$ref": "#/parameters/binding_id"
172            }],
173            "put": {
174                "operationId": "serviceBind",
175                "x-version": "2.6",
176                "summary": "Binds to a service",
177                "description": "When the broker receives a bind request from the Cloud Controller, 
178                "produces": [
179                    "application/json"
180                ],
181                "consumes": [
182                    "application/json"
183                ],
184                "tags": [
185                    "service_instances"
186                ],
```

cf-swagger: spec extensions (*cont.*)

```
129 ▼           "delete": {
130                 "operationId": "deprovisionServiceInstance",
131                 "x-test-dependencies": "createServiceInstance"
132                 "summary": "Deprovisions a service instance.",
133                 "description": "When a broker receives a deprovision request
134 ▼               "produces": [
135                     "application/json"
136 ▲               ],
137 ▼               "tags": [
138                     "service_instances"
139 ▲               ],
```

cf-swagger: high-level overview



cf-swagger (*cont.*)

CLOUD FOUNDRY

Demo 2

1. swagger spec extension for test and TCK
2. go-swagger test command
3. go-swagger tck command
4. running tests with real broker

existing solutions?

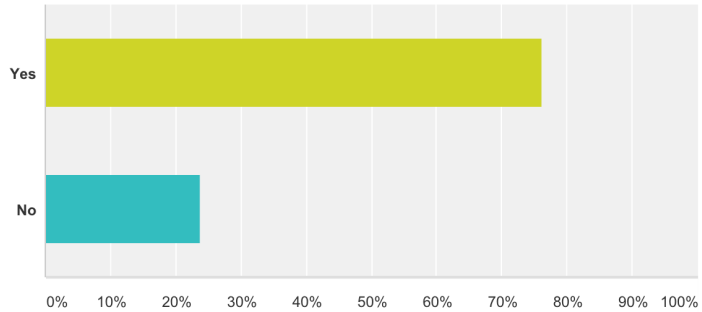
- Bluemix: *servicebrokertest*
  - manually created
  - stuck at v2.3 of spec

- Others?
  - CATs services tests
  - manual, indirectly with CF CLI

survey results: test strategy

Do you currently test CF Service Brokers?

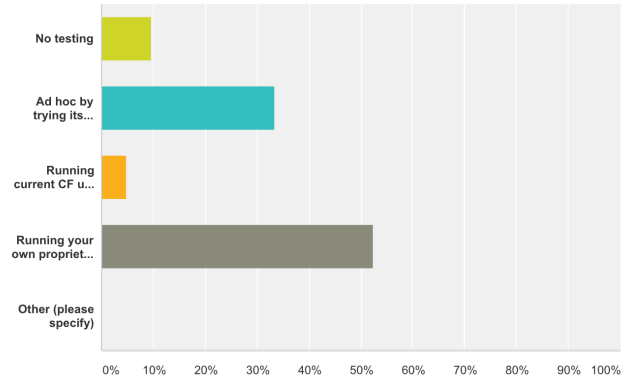
Answered: 21 Skipped: 16



Answer Choices	Responses	
Yes	76.19%	16
No	23.81%	5
Total		21

How would you test a new CF Service Broker?

Answered: 21 Skipped: 16

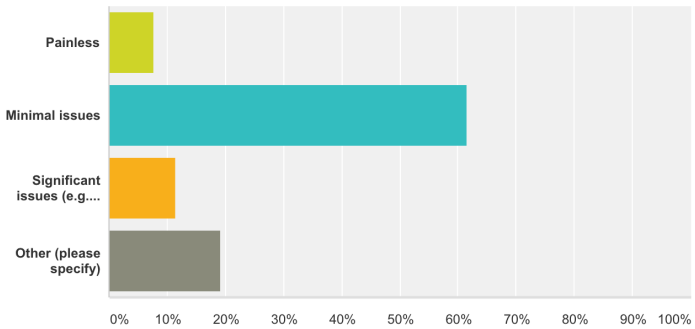


Answer Choices	Responses	
No testing	9.52%	2
Ad hoc by trying its services	33.33%	7
Running current CF unit and integration tests (CATS or modified versions thereof)	4.76%	1
Running your own proprietary tests	52.38%	11
Other (please specify) Responses	0.00%	0
Total		21

survey results: pain & TCK value

What pain and issues (if any) have you experience when deploying and using a new service broker?

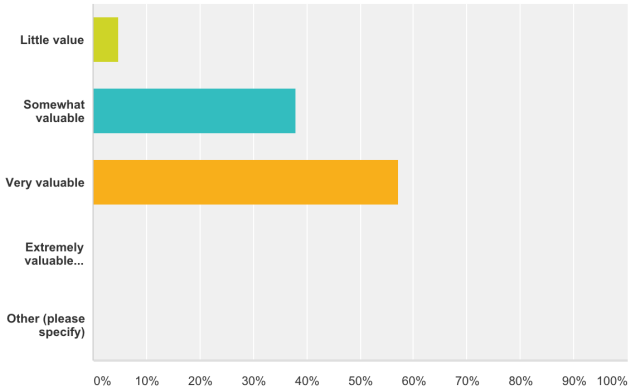
Answered: 26 Skipped: 11



Answer Choices		Responses	
Painless		7.69%	2
Minimal issues		61.54%	16
Significant issues (e.g., requiring redeploying apps and services)		11.54%	3
Other (please specify)	Responses	19.23%	5
Total			26

How valuable do you think would be a compliance test suite for CF service brokers? (e.g., verifying compliance to v2.6 of the spec)

Answered: 21 Skipped: 16



Answer Choices		Responses	
Little value		4.76%	1
Somewhat valuable		38.10%	8
Very valuable		57.14%	12
Extremely valuable (willing to pay $ to use it)		0.00%	0
Other (please specify)	Responses	0.00%	0
Total			21

what next?

TCK

- complete and harden the code generation
- submit code-generation changes to go-swagger

explore describing other CF APIs

- CC v3 (?)
- UAA, CF-Abacus

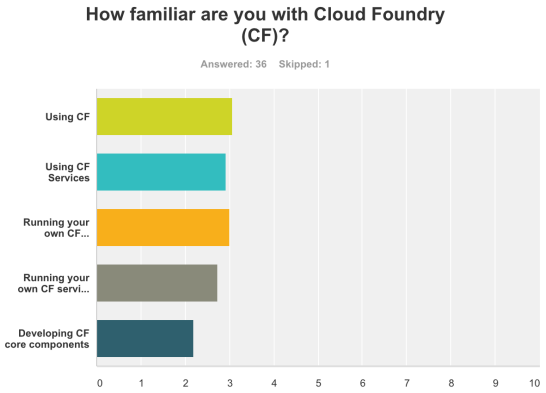
socialize with CF community: *dW Open* and *cf-swagger* incubators?

thank you
QAs

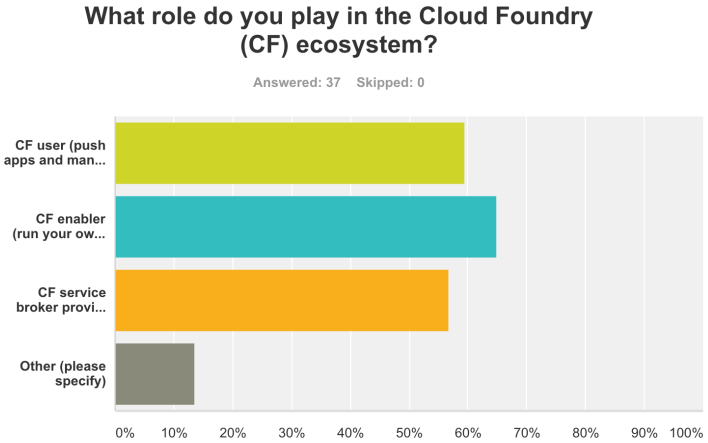
https://github.com/maximilien/cf-swagger

backup

survey results: CF role & familiarity



	Not familiar at all	Somewhat familiar	Very familiar	Expert (I wrote the book)	Total	Weighted Average
Using CF	2.78% 1	8.33% 3	69.44% 25	19.44% 7	36	3.06
Using CF Services	2.78% 1	22.22% 8	55.56% 20	19.44% 7	36	2.92
Running your own CF environment	2.78% 1	19.44% 7	52.78% 19	25.00% 9	36	3.00
Running your own CF service broker	14.29% 5	20.00% 7	42.86% 15	22.86% 8	35	2.74
Developing CF core components	27.78% 10	38.89% 14	19.44% 7	13.89% 5	36	2.19



Answer Choices	Responses
CF user (push apps and manage them)	59.46% 22
CF enabler (run your own CF installation)	64.86% 24
CF service broker provider (e.g., you have service brokers in any of the current CF installations)	56.76% 21
Other (please specify) Responses	13.51% 5
Total Respondents: 37	

survey results: detail on pain