

Consumer-driven testing usando Pact JVM

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Consumer-driven contracts

Pact

Pact Broker

Esempio

Consumer-driven contracts

- ▶ Un pattern per servizi in evoluzione
- ▶ Divenuto uno standard per architetture a microservizi
- ▶ Permette di ridurre al minimo le dipendenze tra componenti diverse
- ▶ Descrivono la comunicazione tra le componenti, non il loro funzionamento

Consumer-driven contracts

Service consumer: a component that initiates a HTTP request to another component;

Service provider: a server that responds to a HTTP request from another component;

Consumer e provider possono essere sviluppati da team o anche da organizzazioni differenti. Bisogna assicurare che possano evolvere in maniera indipendente, e non dipendano da una particolare versione dell'altro componente.

Consumer-driven contracts

Given "there is no user called Mary"

When "creating a user with username Mary"

POST /users { "username": "mary", email: "...", ... }

Then Expected Response is 200 OK

Given "there is already a user called Mary"

When "creating a user with username Mary"

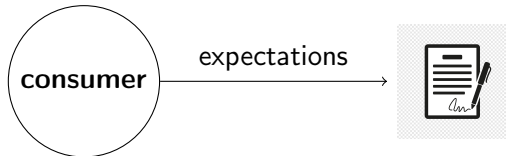
POST /users { "username": "mary", email: "...", ... }

Then Expected Response is 409 Conflict

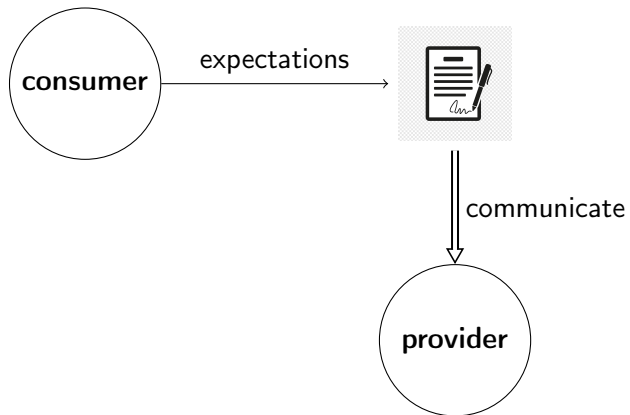
Consumer-driven contracts



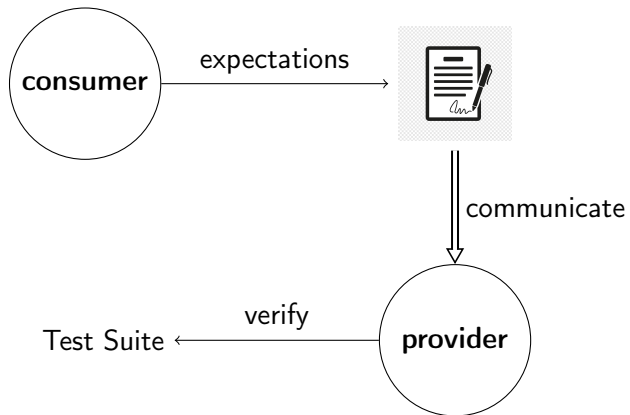
Consumer-driven contracts



Consumer-driven contracts



Consumer-driven contracts



Consumer-driven contracts

Integration test e e2e test:

- + confidenza
- introduce dipendenze
- feedback lento
- si rompe facilmente
- richiede molta manutenzione

Contract test:

- + confidenza
- + eseguiti indipendentemente
- + feedback veloce
- + stabili
- + facili da mantenere

Chiaramente i test a contratto non sostituiscono quelli di integrazione, ma possono alleggerirne il carico.

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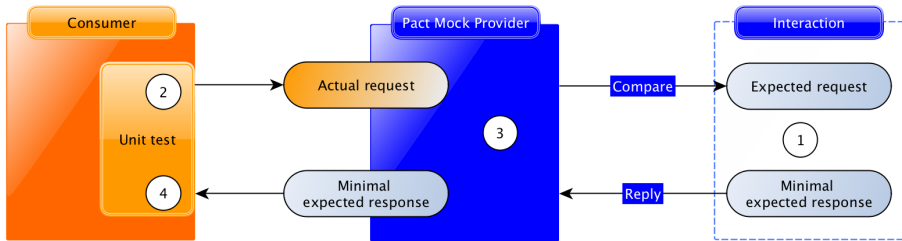
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NON SONO TEST FUNZIONALI

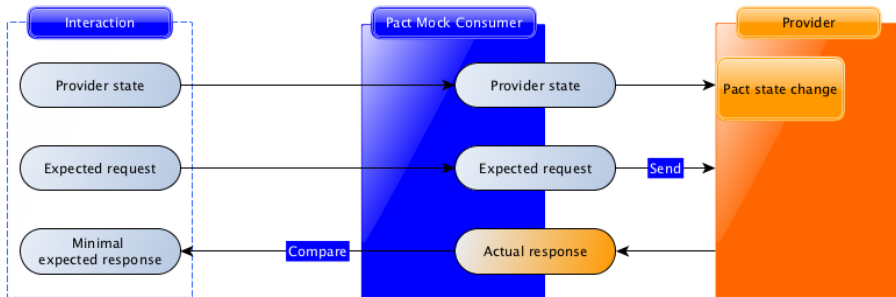
Pact

- ▶ Consumer-driven contract testing tool
- ▶ Collection of test cases describing single concrete request/response pairs
- ▶ Supports all main languages
- ▶ Communicates through json files
- ▶ Active project

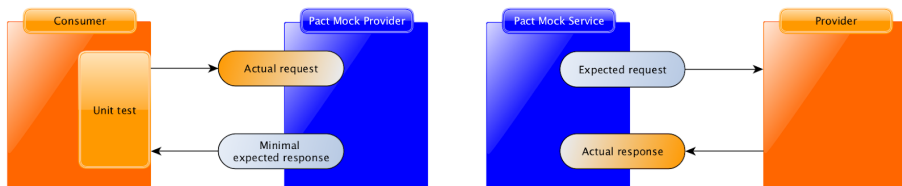
Pact



Pact



Pact









Pact broker

- ▶ Centrale il ruolo della comunicazione
- ▶ Le informazioni su versioni e risultati dei test sono sparse su più build
- ▶ Tool per aggregare i risultati, generando anche documentazione nel processo
- ▶ Supporto per badges

Pact Broker

Pacts

| Consumer ↕ | | Provider ↕ | Latest pact published | Last verified |
|-----------------|---|-----------------|------------------------|------------------------|
| Foo |  | Animals | 2 minutes ago | 2 days ago |
| Foo |  | Bar | 7 days ago | 15 days ago ⚠ |
| Foo |  | Hello World App | 1 day ago | |
| Foo |  | Wiffles | less than a minute ago | 7 days ago |
| Some other app |  | A service | 26 days ago | less than a minute ago |
| The Android App |  | The back end | less than a minute ago | |

Pact Broker

A pact between Zoo App and Animal Service

Zoo App version: 1.0.0

Requests from Zoo App to Animal Service

Date published: 11/11/2014 8:56PM +11:00

[View in HAL Browser](#)

- A request for an alligator given there is an alligator named Mary
- A request for an alligator given there is not an alligator named Mary
- A request for an alligator given an error occurs retrieving an alligator

Interactions

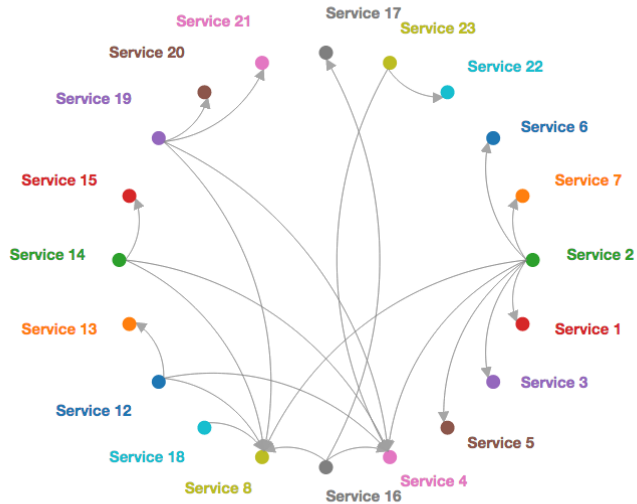
Given **there is an alligator named Mary**, upon receiving **a request for an alligator** from Zoo App, with

```
{
  "method": "get",
  "path": "/alligators/Mary",
  "headers": {
    "Accept": "application/json"
  }
}
```

Animal Service will respond with:

```
{
  "status": 200,
```

Pact Broker



Esempio

links

<https://martinfowler.com/articles/consumerDrivenContracts.html>

<https://github.com/DiUS/pact-jvm/>

<https://docs.pact.io/>

https://github.com/pact-foundation/pact_broker

<https://github.com/DiUS/pact-workshop-jvm>