

Guardrail State of the Union



**Sean Sullivan
March 18, 2021**

REST is the new SOAP



Guardrail

The Definitive Guide

O RLY?

Twilio engineering

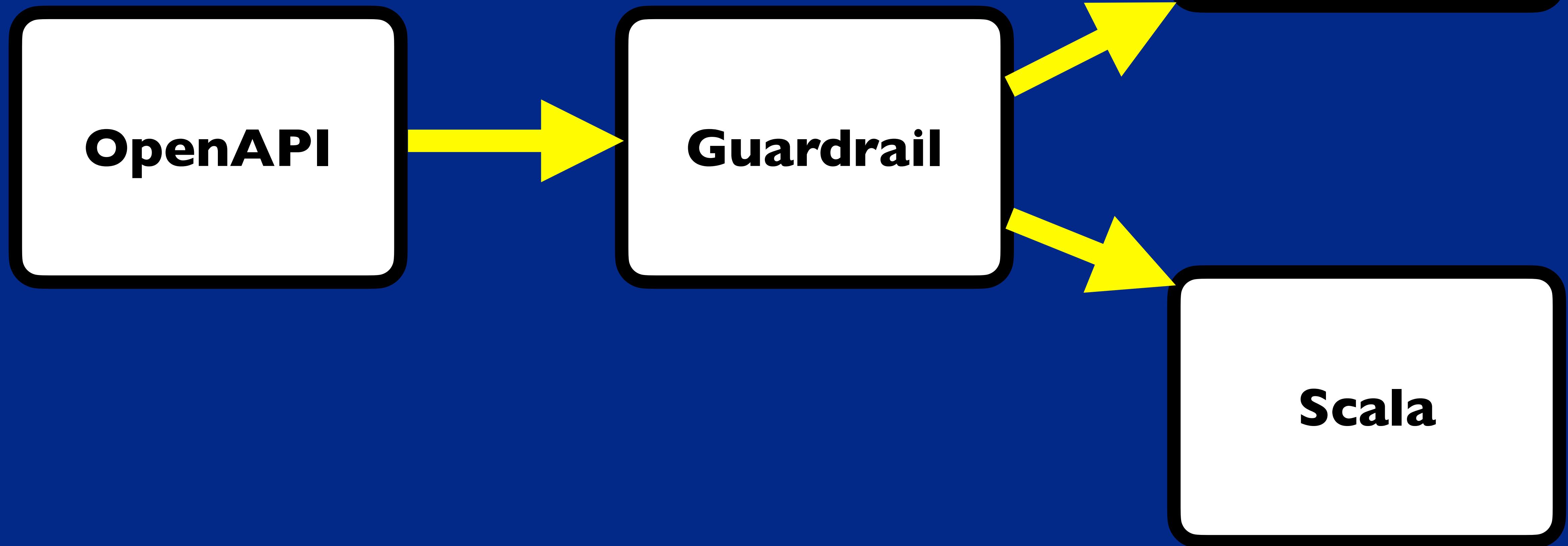
Introduction

What's new

Artisan quality

2021 Roadmap

Guardrail
is a
code generation tool



```
"paths": {  
  "/pet": {  
    "post": {  
      "tags": [  
        "pet"  
      ],  
      "x-jvm-package": "pet",  
      "summary": "Add a new pet to the store",  
      "description": "",  
      "operationId": "addPet",
```

← OpenAPI

generated code →

```
import com.example.clients.petstore.*;  
import com.example.clients.petstoredefinitions.*;  
  
public abstract class AddPetResponse {  
  
  public static class Created extends AddPetResponse {  
  }  
  
  public static class BadRequest extends AddPetResponse {  
  }
```

January 2017

-  **Refactor property to meta type**
#3 by bsemiletko was merged on Jan 25, 2017 • Review required
-  **Add Paths code generator**
#2 by cchen was merged on Jan 25, 2017 • Review required
-  **Simple scala service**
#1 by dstewart was merged on Jan 24, 2017 • Review required

First public release: September 2017

v0.26.0



on Sep 4, 2017



b4dd0fa



zip



tar.gz

First blog post: March 2018

A screenshot of a web browser displaying a blog post from Twilio. The browser window has a dark header with standard OS X control icons. The URL in the address bar is <https://www.twilio.com/blog/2018/03/twilio-guardr>. Below the address bar, there are social sharing buttons for Twitter, Facebook, and LinkedIn.

The blog post itself has a white background. At the top left, there is a small profile picture of Devon Stewart, followed by the text "BY DEVON STEWART • 2018-03-22". To the right of this, there are three blue rectangular buttons with white text: "TWITTER", "FACEBOOK", and "LINKEDIN".

The main title of the post is "Introducing Twilio's guardrail", displayed prominently in a large, dark font. Below the title is a large, dark image featuring the Twilio logo (a white circle with four dots) and the word "twilio" in white, positioned above a white plus sign. To the right of the plus sign is the word "SWAGGER" in a large, bold, white sans-serif font. The background of the image is a dark, abstract pattern of what appears to be books or circuit boards.



Guardrail is opinionated



API First development



Strongly typed code



Make illegal states
unrepresentable



Leverage the
type system to
ensure correctness



Embrace
referential transparency



Favor immutability

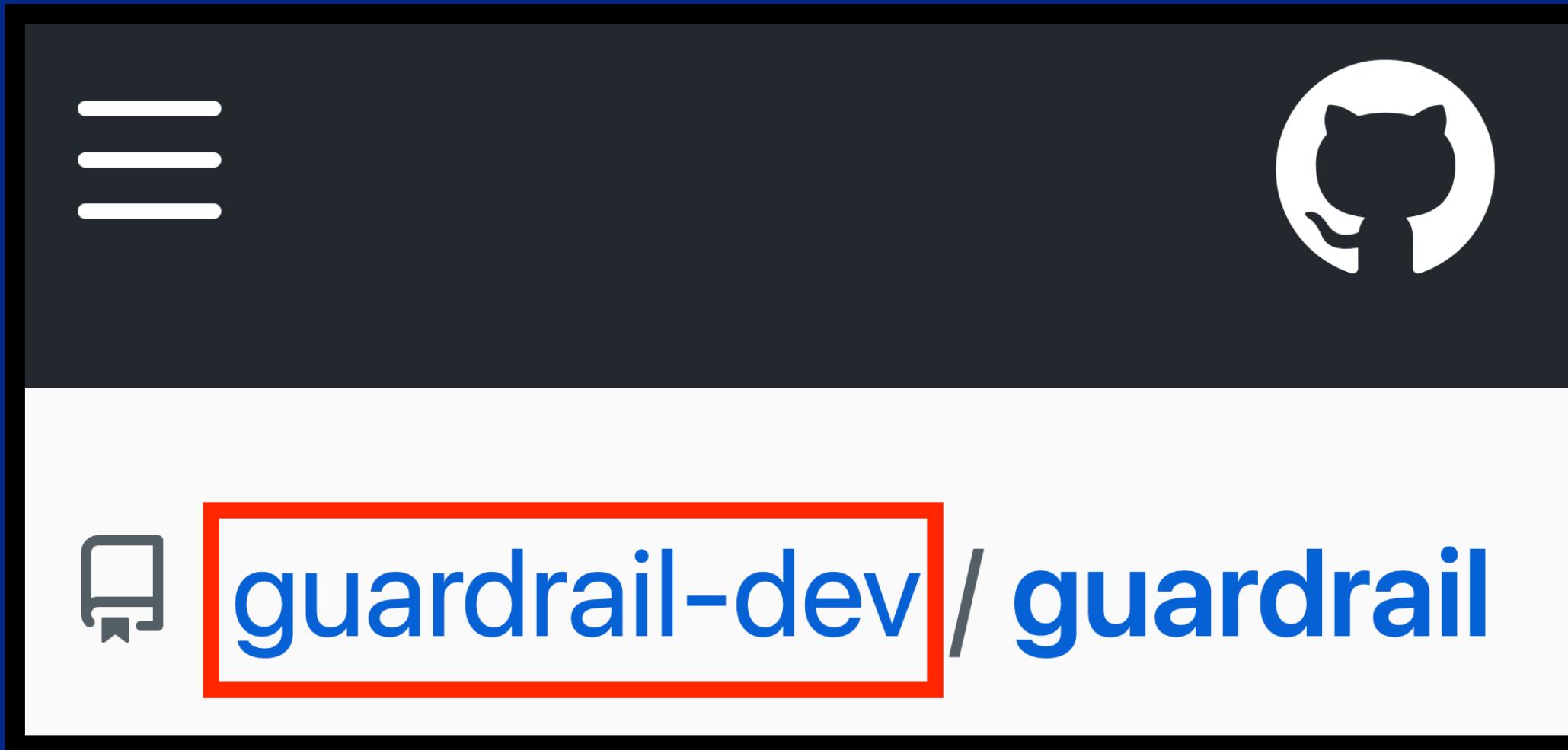


Generate idiomatic code



What's New?

New GitHub org



<https://github.com/guardrail-dev>



sbt plugin



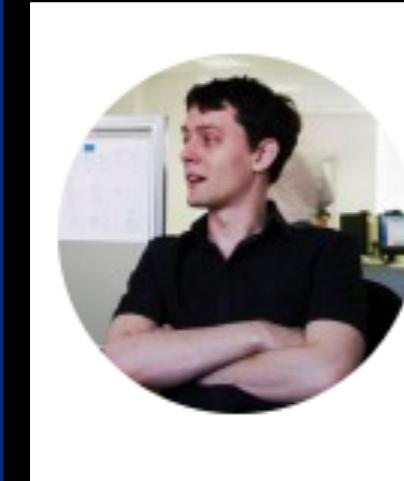
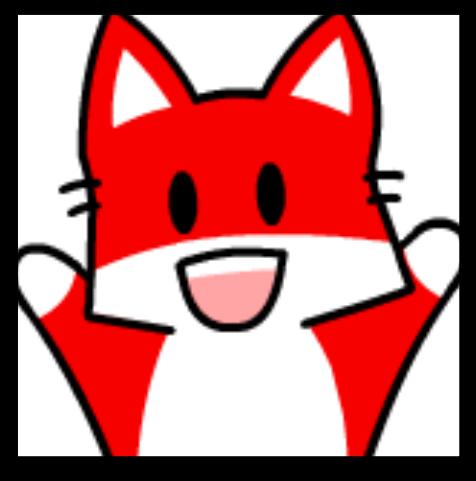
Maven plugin



Gradle plugin



guardrail-dev / guardrail-gradle-plugin



Ilya Cherkasov head-thrash
📍 Tallinn

```
plugins {  
    id('java')  
    id('com.twilio.guardrail')  
}
```



Java collections



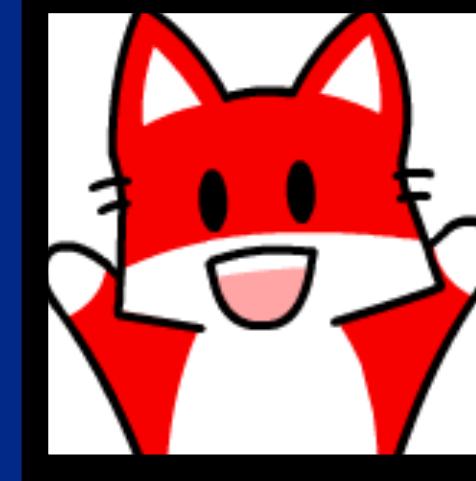
VAVR collections



VAVR support

🔗 New collections abstraction ●

#887 by kelnos was merged on Dec 15, 2020



Brian Tarricone kelnos

Strongly typed.

📍 San Francisco, CA

🔗 Vavr collections lib for Java ●

#768 by kelnos was merged on Dec 8, 2020

pom.xml

```
<plugin>
  <groupId>com.twilio</groupId>
  <artifactId>guardrail-maven-plugin_2.12</artifactId>
  <version>0.62.2</version>

  ...
  <modules>
    <module>java-vavr</module> ← VAVR
    <module>jackson</module>
    <module>dropwizard</module>
    <module>async-http-client</module>
  </modules>

  ...
<plugin>
```



Dropwizard

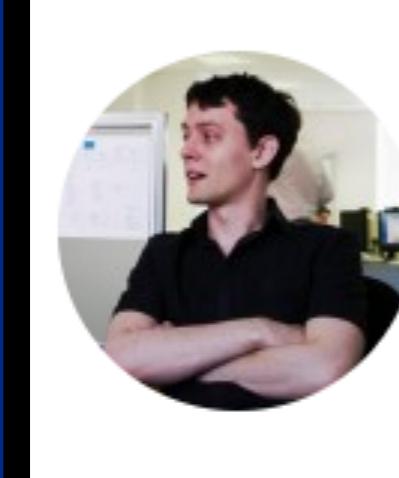


Spring MVC



>Adds Support of Spring MVC Framework

#520 by head-thrash was merged on Feb 17, 2020 • Approved



Ilya Cherkasov head-thrash
📍 Tallinn

```
<configuration>
```

```
  <language>java</language>
```

```
  <kind>server</kind>
```

```
  <framework>spring-mvc</framework> ← Spring
```



Sample apps

NEW

guardrail-sample-maven-dropwizard

Example of using Java to write dropwizard servers with guardrail

guardrail-sample

Java MIT 2 0 0 Updated yesterday

NEW

guardrail-sample-http4s

guardrail-sample

Scala MIT 1 2 0 0 Updated yesterday



guardrail-sample-sbt akkahttp

Example of using akka-http and circe to generate a server

guardrail-sample



Scala



MIT



1



0



0



0

Updated yesterday



guardrail-sample-sbt http4s-zio

Example of using http4s + catz + zio, clients and servers

guardrail-sample



Scala



MIT



1



2



0



0

Updated yesterday



guardrail-sample-gradle-springmvc

Example of generating spring-mvc servers using
guardrail

guardrail-sample



Java



MIT



2



0



0



0

Updated yesterday



guardrail-sample-gradle-http4s-zio

Example of using http4s + catz + zio, built with gradle,
clients and servers

guardrail-sample



Scala



MIT



1



1



0



0

Updated yesterday



Artisan quality



Continuous integration



Travis CI



**GitHub
Actions**

guardrail / .github / workflows /



-  ci.yml
-  publish-website.yml
-  release-drafter.yml
-  release.yml



ci.yml

on: pull_request

Matrix: core

✓ 1 job completed

Show all jobs

Matrix: java

✓ 6 jobs completed

Show all jobs

Matrix: scala

✓ 24 jobs completed

Show all jobs



Which version of Java?



JDK 8



JDK 14



JDK 11



JDK 15



JDK 13



JDK 16

Build matrix

```
matrix:  
  java: [ '8', '11', '13', '14', '15', '16' ]
```

```
scala: [  
  { version: '2.12.12' , bincompat: '2.12' } ,  
  { version: '2.13.4' , bincompat: '2.13' }  
]
```

Publish to Maven Central

release.yml

on: release



Publish release

16m 37s

Testing, Testing, Testing



ScalaTest



ScalaCheck



Scoverage

Testing, Testing, Testing



EqualsVerifier



sbt-test

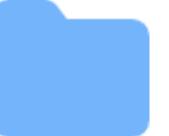
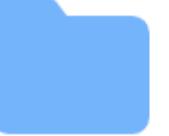
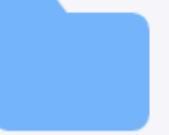


maven-invoker-plugin

maven-invoker-plugin

guardrail-maven-plugin / src / it /

Integration tests

-  codegen-java-vavr
-  codegen-java
-  codegen-scala
-  codegen-spring-mvc-java



Roadmap



OpenAPI 3.1



Dropwizard 2.x



Scala 3.0

Final thoughts



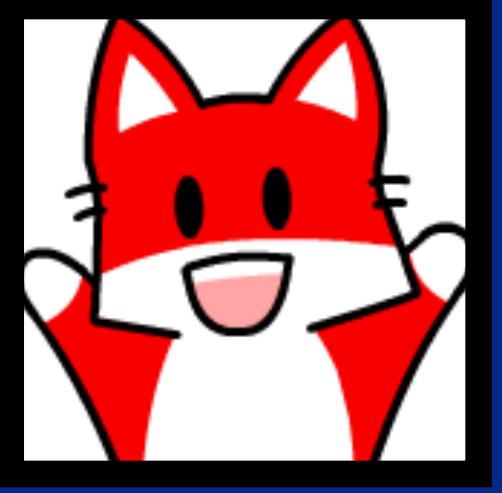
Guardrail is awesome



API First development



Code generation is a force multiplier



Contribute to guardrail !

Questions?

The End