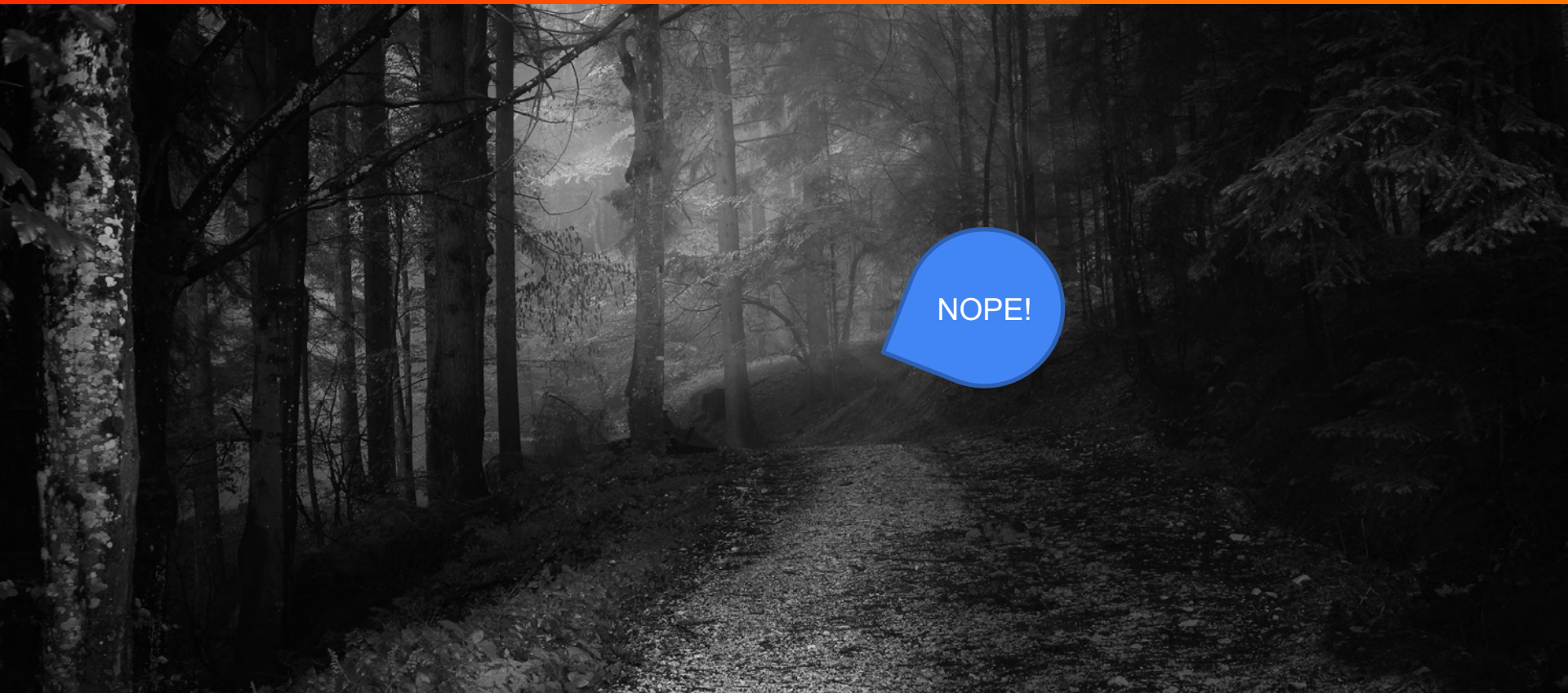
lumigo

Deploying, Building and Observing SDKs as a Service

Why do devs prefer app dark themes?

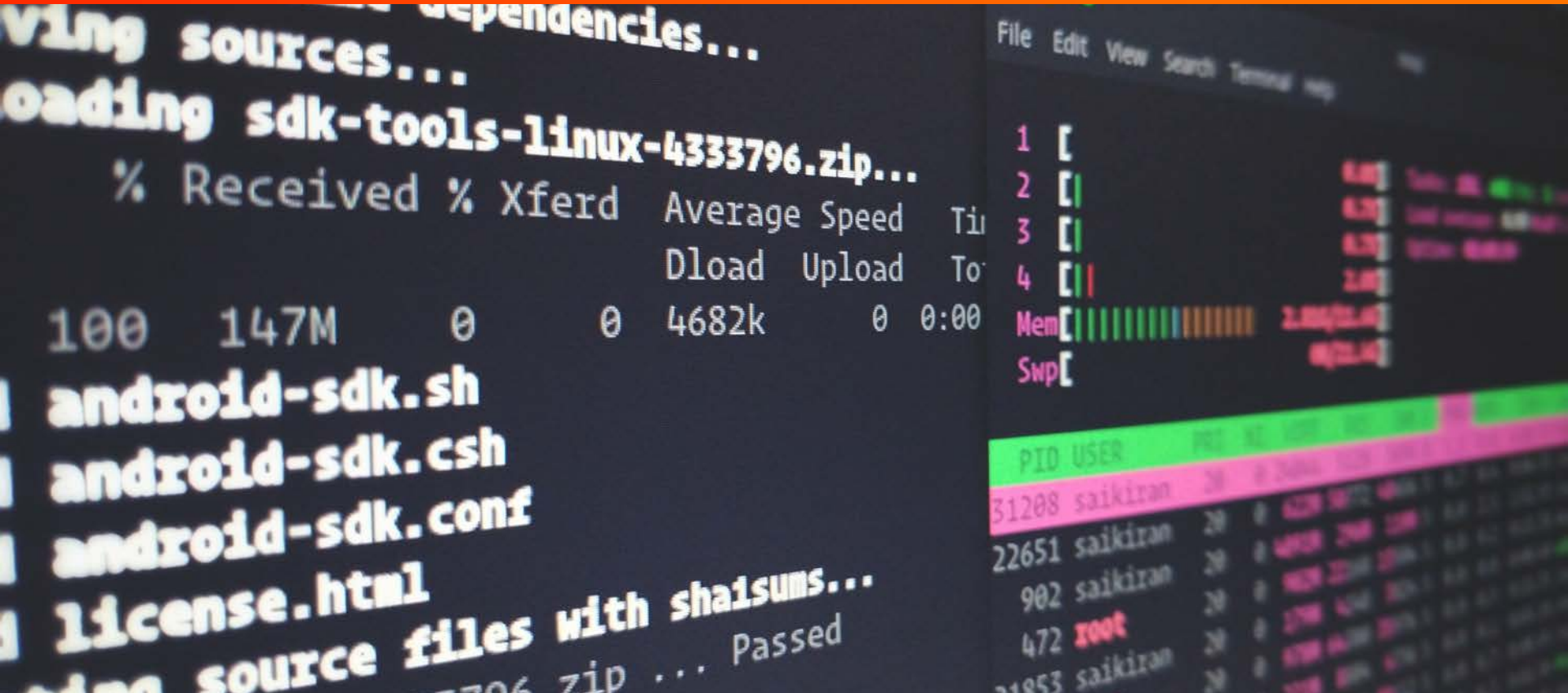


DeveloperSteve Coochin

Lumigo Senior Developer Advocate

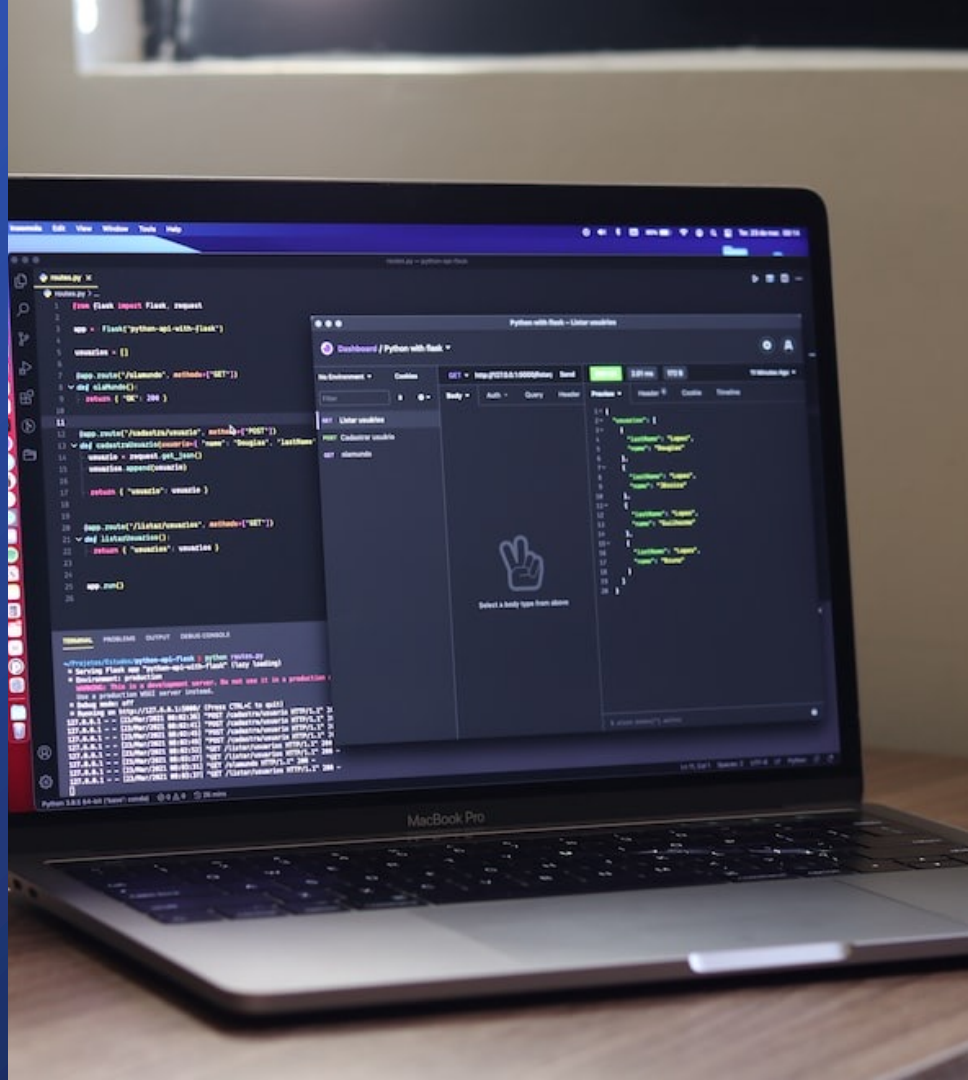
Dev/Maker/Geek/Speaker/streamer/ruralite

I <3 APIs


dependencies...
ving sources...
oading sdk-tools-linux-4333796.zip...
% Received % Xferd Average Speed
Dload Upload
100 147M 0 0 4682k 0 0:00
android-sdk.sh
android-sdk.csh
android-sdk.conf
license.html
source files with shaisums...
Passed
File Edit View Search Terminal
PID USER
31208 saikiran
22651 saikiran
902 saikiran
472 root

A Good API needs to...

- Provide a Valid Service
- Be Well Documented
- Integration options
- SDKs



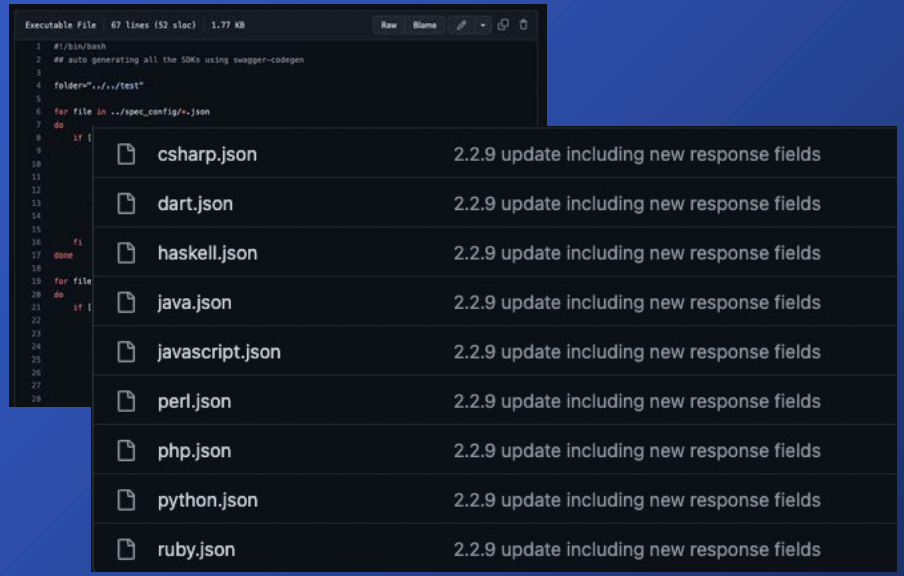
OpenAPI Generator

- Local CLI
- Deployable service
- OpenAPI & Swagger support
- 50+ different languages
- Customizable SDK templates
- OSS with a HUGE community

API clients	**ActionScript**, **Ada**, **Apex**, **Bash**, **C**, **C#** (.net 2.0, 3.5 or later, .NET Standard 1.3 - 2.1, .NET Core 3.1, .NET 5.0. Libraries: RestSharp, GenericHost, HttpClient), **C++** (Arduino, cpp-restsdk, Qt5, Tizen, Unreal Engine 4), **Clojure**, **Crystal**, **Dart**, **Elixir**, **Elm**, **Eiffel**, **Erlang**, **Go**, **Groovy**, **Haskell** (http-client, Servant), **Java** (Apache HttpClient, Jersey1.x, Jersey2.x, OkHttp, Retrofit1.x, Retrofit2.x, Feign, RestTemplate, RESTEasy, Vertx, Google API Client Library for Java, Rest-assured, Spring 5 Web Client, MicroProfile Rest Client), **k6**, **Kotlin**, **Lua**, **Nim**, **Node.js/JavaScript** (ES5, ES6, AngularJS with Google Closure Compiler annotations, Flow types, Apollo GraphQL DataStore), **Objective-C**, **OCaml**, **Perl**, **PHP**, **PowerShell**, **Python**, **R**, **Ruby**, **Rust** (hyper, reqwest, rust-server), **Scala** (akka, http4s, scalaz, sttp, swagger-async-httpclient), **Swift** (2.x, 3.x, 4.x, 5.x), **Typescript** (AngularJS, Angular (2.x - 13.x), Aurelia, Axios, Fetch, Inversify, jQuery, Nestjs, Node, redux-query, Rxjs)
Server stubs	**Ada**, **C#** (ASP.NET Core, Azure Functions), **C++** (Pistache, Restbed, Qt5 QHTTPEngine), **Erlang**, **F#** (Giraffe), **Go** (net/http, Gin, Echo), **Haskell** (Servant, Yesod), **Java** (MSF4J, Spring, Undertow, JAX-RS: CDI, CXF, Inflector, Jersey, RestEasy, Play Framework, PKMST, Vert.x, Apache Camel), **Kotlin** (Spring Boot, Ktor, Vertx), **PHP** (Laravel, Lumen, Mezzio (fka Zend Expressive), Slim, Silex, Symfony), **Python** (FastAPI, Flask), **NodeJS**, **Ruby** (Sinatra, Rails5), **Rust** (rust-server), **Scala** (Akka, Finch, Lagom, Play, Scalatra)

Generator CLI

- openapi-generator-cli generate -g go --additional-properties=prependFormOrBodyParameters=true \ -o out -i petstore.yaml




```
openapi-generator-cli help generate
NAME
        openapi-generator-cli generate - Generate code with the specified
        generator.

SYNOPSIS
        openapi-generator-cli generate
                [(-a <authorization> | --auth <authorization>)]
                [--api-name-suffix <api name suffix>] [--api-package <api package>]
                [--artifact-id <artifact id>] [--artifact-version <artifact version>]
                [(-c <configuration file> | --config <configuration file>)] [--dry-run]
                [(-e <templating engine> | --engine <templating engine>)]
                [--enable-post-process-file]
                [(-g <generator name> | --generator-name <generator name>)]
                [--generate-alias-as-model] [--git-host <git host>]
                [--git-repo-id <git repo id>] [--git-user-id <git user id>]
                [--global-property <global properties>...] [--group-id <group id>]
                [--http-user-agent <http user agent>]
                [(-i <spec file> | --input-spec <spec file>)]
                [--ignore-file-override <ignore file override location>]
                [--import-mappings <import mappings>...]
                [--instantiation-types <instantiation types>...]
                [--invoker-package <invoker package>]
                [--language-specific-primitives <language specific primitives>...]
                [--legacy-discriminator-behavior] [--library <library>]
                [--log-to-stderr] [--minimal-update]
                [--model-name-prefix <model name prefix>]
                [--model-name-suffix <model name suffix>]
                [--model-package <model package>]
                [(-o <output directory> | --output <output directory>)] [(-p <additional
properties> | --additional-properties <additional properties>)...]
                [--package-name <package name>] [--release-note <release note>]
                [--remove-operation-id-prefix]
                [--reserved-words-mappings <reserved word mappings>...]
                [(-s | --skip-overwrite)] [--server-variables <server variables>...]
                [--skip-operation-example] [--skip-validate-spec]
                [--strict-spec <true/false strict behavior>]
                [(-t <template directory> | --template-dir <template directory>)]
                [--type-mappings <type mappings>...] [(-v | --verbose)]
```

SDK as a service

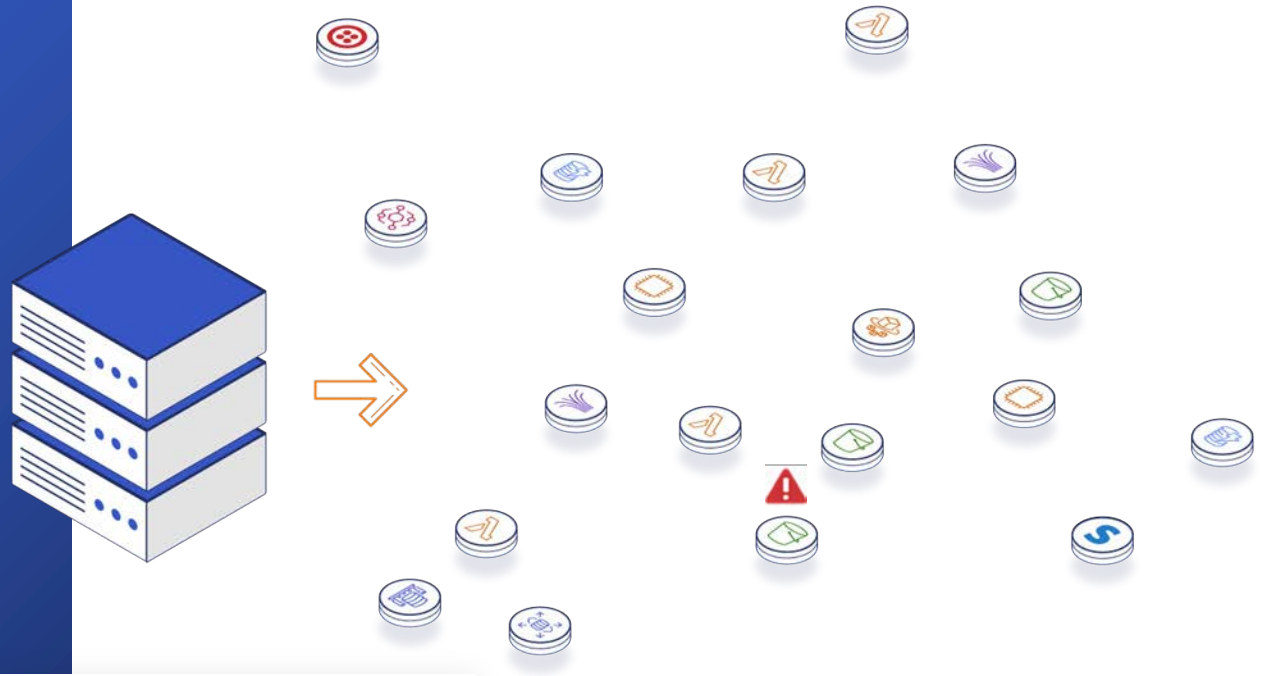
API

SDK gen

Lambda

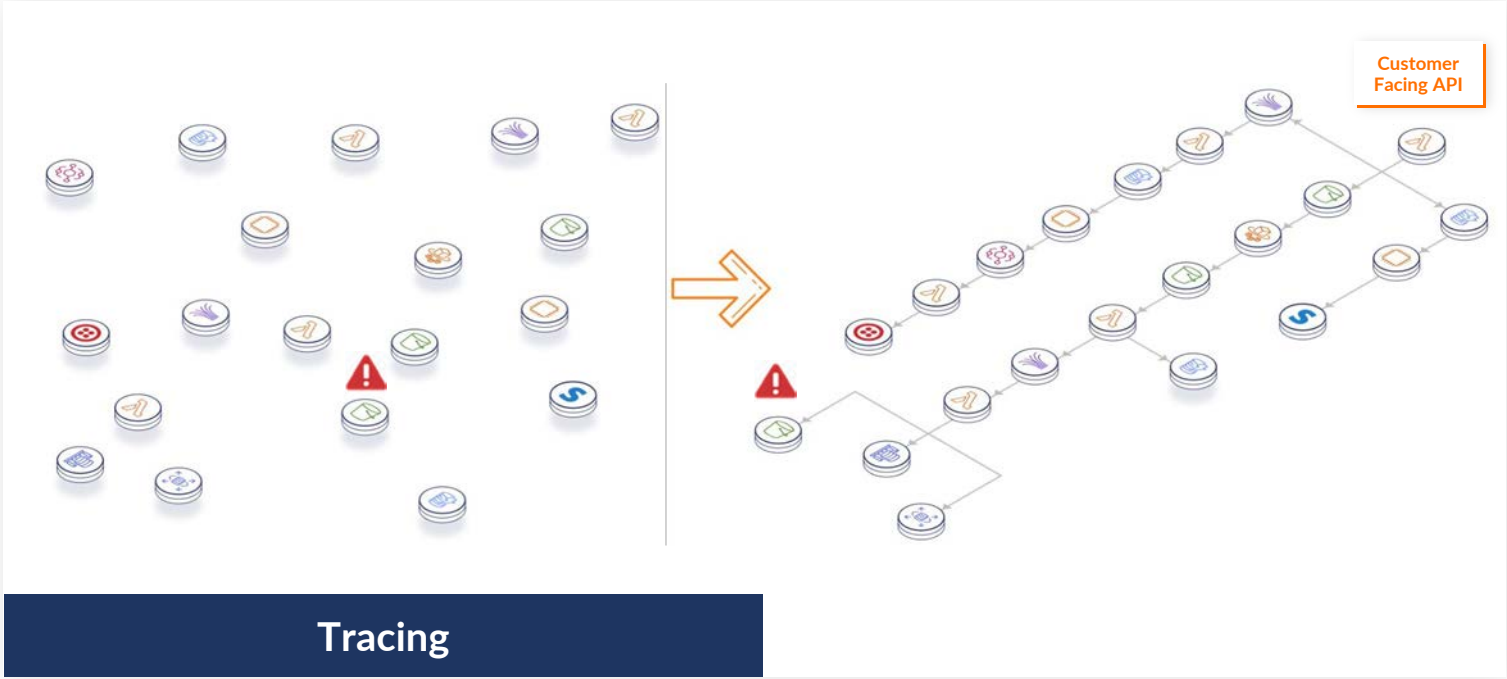
How Distributed Tracing can help

Cloud Native Applications are highly distributed with hundreds of ever-changing components

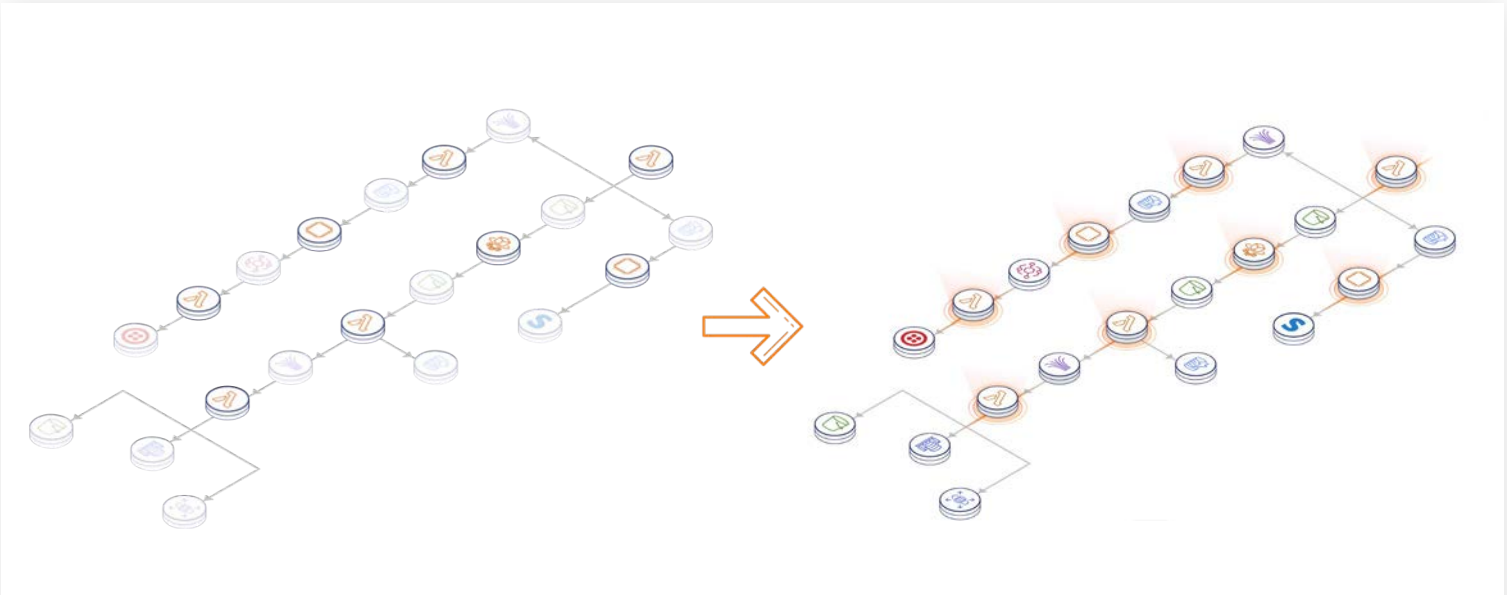


Hard to zoom-out and understand overall **application health** without understanding the **context and connections between them**

Distributed Tracing



Agentless Observability

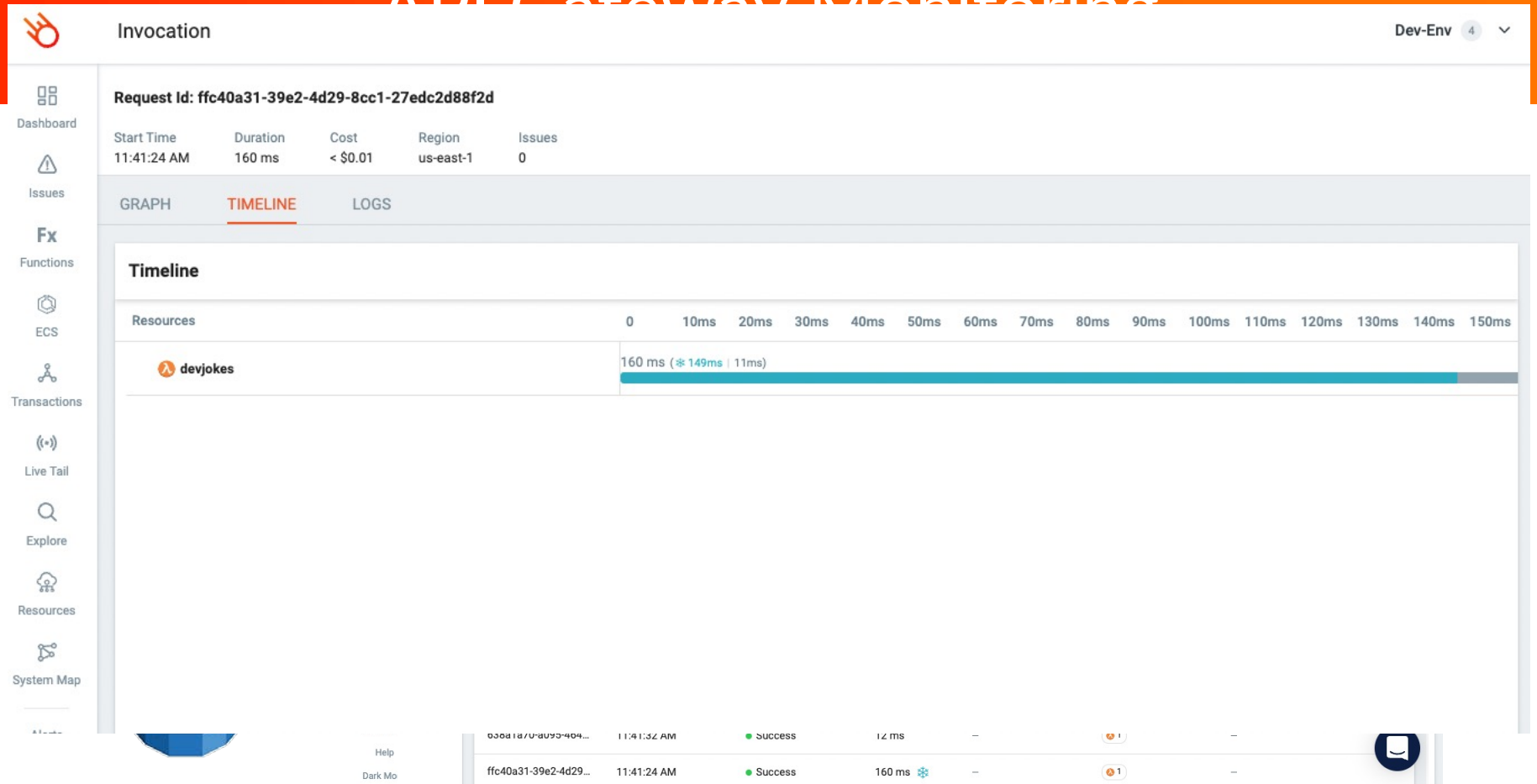


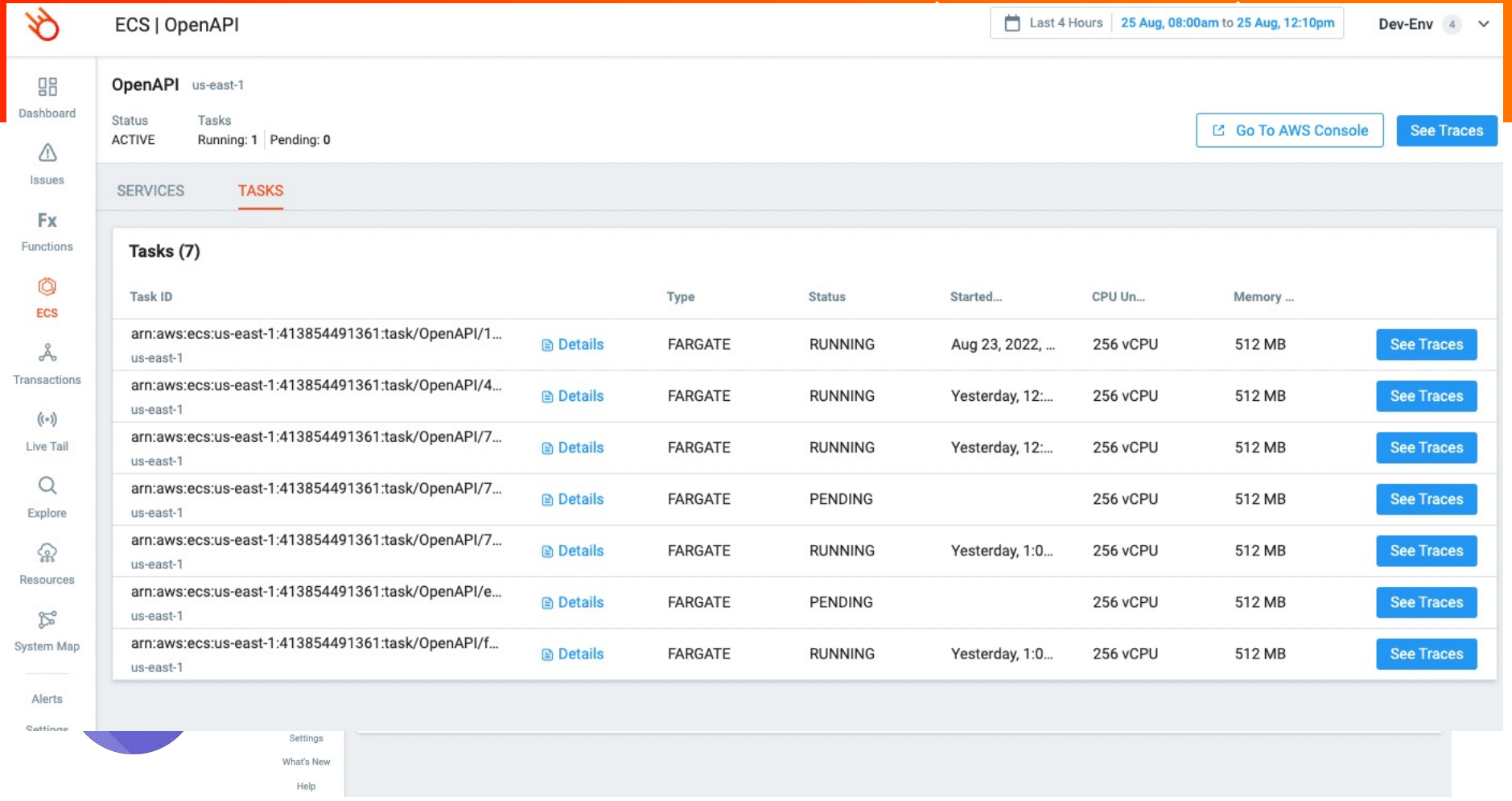
Tracing

Across Managed Services

Full Circle Observability

API Gateway Monitoring




ECS | OpenAPI
Last 4 Hours
25 Aug, 08:00am to 25 Aug, 12:10pm
Dev-Env
4
Dashboard
Issues
Functions
ECS
Transactions
Live Tail
Explore
Resources
System Map
Alerts
Settings
What's New
Help
OpenAPI
us-east-1
Status
ACTIVE
Tasks
Running: 1
Pending: 0
Go To AWS Console
See Traces
SERVICES
TASKS
Tasks (7)
Task ID
Type
Status
Started...
CPU Un...
Memory ...
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/1...
us-east-1
Details
FARGATE
RUNNING
Aug 23, 2022, ...
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/4...
us-east-1
Details
FARGATE
RUNNING
Yesterday, 12:...
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/7...
us-east-1
Details
FARGATE
RUNNING
Yesterday, 12:...
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/7...
us-east-1
Details
FARGATE
PENDING
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/7...
us-east-1
Details
FARGATE
RUNNING
Yesterday, 1:0...
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/e...
us-east-1
Details
FARGATE
PENDING
256 vCPU
512 MB
See Traces
arn:aws:ecs:us-east-1:413854491361:task/OpenAPI/f...
us-east-1
Details
FARGATE
RUNNING
Yesterday, 1:0...
256 vCPU
512 MB
See Traces

SDK Testing

SDK test

Invocations

Search request id

Select execution tag

Request Id	Start Time	Result	Duration
5a88f644-3064-4a0c-b036-63a4...	3:35:04 PM	Success	184 ms
8baccf1e-c5ce-4aec-987b-311d...	3:35:04 PM	Success	719 ms
a15a54bd-d87f-4f17-a33f-6c9d0...	3:32:53 PM	Success	262 ms
d1825ce8-d68c-4e7c-8448-319c...	3:32:51 PM	Success	1,598 ms

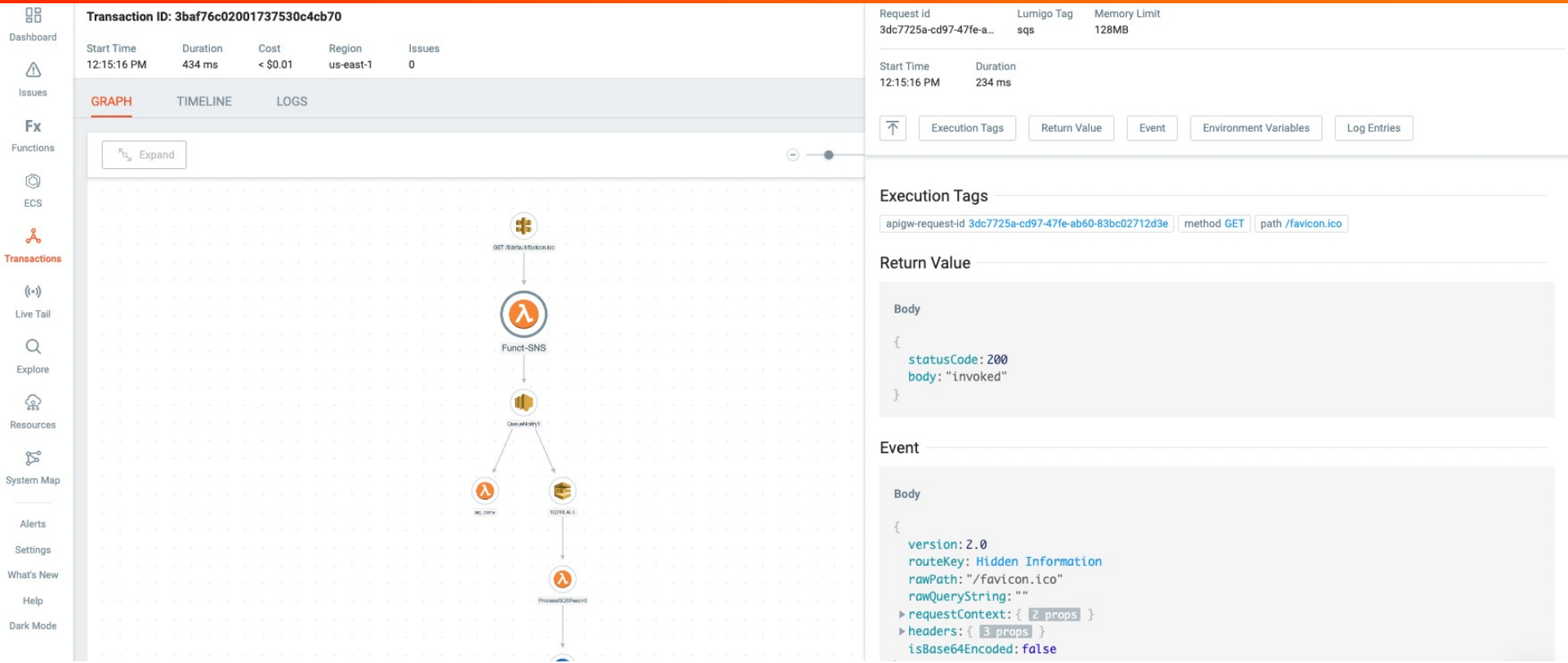
Invocations

Search request id

Select execution tag

Request Id	Start Time	Result	Duration
57b30eb5-076a-49f5-9347-b805...	3:41:36 PM	Success	76 ms
e2266667-cd13-4691-9368-466...	3:41:35 PM	Success	951 ms

See the full trace picture

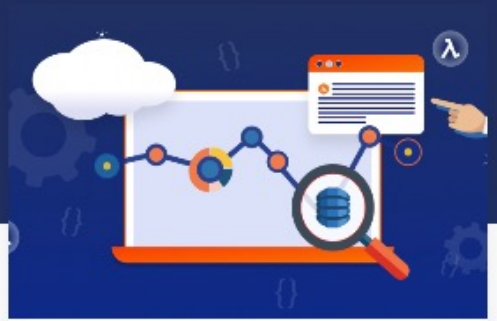


Take Aways

- Design APIs for Dev Consumption
- Rinse, Repeat and Refine
- Monitor and Trace Everything
  - APIs
  - SDKs
  - Deployed Code

Distributed Tracing made easy

Lumigo.io/blog



DeveloperSteve, Jan 18 2023

Monitoring AWS DynamoDB performance and latency

Amazon DynamoDB is a fully managed NoSQL database service provided by AWS and is tailor-made for serverless applications. As a...

DeveloperSteve, Jan 12 2023

Comparing Amazon ECS launch types: EC2 vs. Fargate

Amazon Elastic Container Service (ECS) is a fully managed container orchestration service that enables users to easily run, manage and...

Saar Tochner, Dec 22 2022

Zero-Friction AWS Lambda Instrumentation with external extensions

If you've been in the software business for some time, you've probably noticed that creating software isn't only about adding...

USE YOUR TECH SUPER POWERS FOR GOOD

"Be excellent to each other"

Thank You

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