



#GlobalAzure

#GABMUGPeru

Jesús Angulo

Autor en SomosTechies.com



Account Architect en Baufest



@jesulink2514



jesus@somostechies.com



/somostechies-com



Agenda

- Problemas con el patrón de microservicios
- Dapr
- Azure Container Apps
- Microservicios con Azure CA+ Dapr



#GABMUGPeru

¿Problemas con el patrón de microservicios?

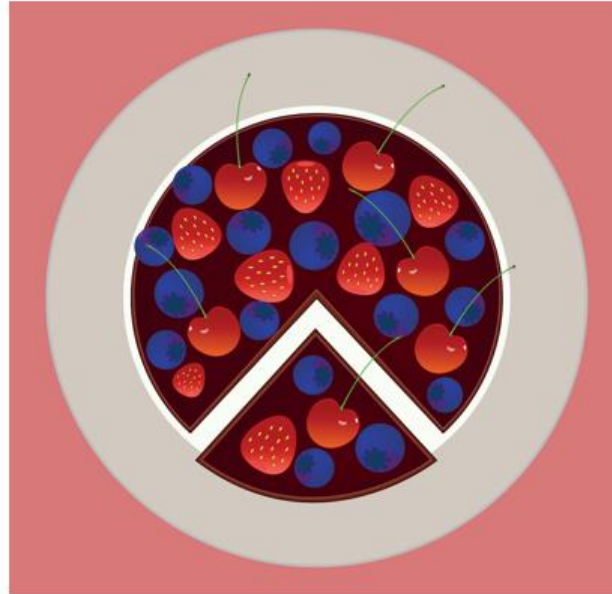


#GlobalAzure

Software Architecture Evolution



With monolithic, tightly coupled applications, all changes must be pushed at once, making continuous deployment impossible.



Traditional SOA allows you to make changes to individual pieces. But each piece must be carefully altered to fit into the overall design.



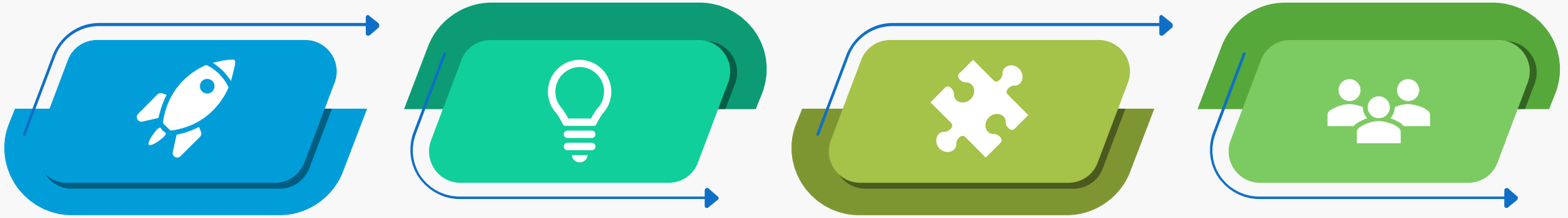
With a microservices architecture, developers create, maintain and improve new services independently, linking info through a shared data API.

Problemas relacionados

- Perfecto para sistemas inherentemente complejos pero puede introducir complejidad accidental.
- Los microservicios aumentan el numero de partes móviles como parte de tu solución.
- Sin un correcto entendimiento del negocio tomaras decisiones incorrectas y la división se volverá un problema.

Observation & Monitoring

Critical to troubleshoot issues with distributed systems



Log Aggregator

Centralized logging service that aggregates logs from each service instance – can be used to search & analyze the logs and trigger alerts based on patterns.
Eg: ELK / EFK stack, Amazon cloud watch, Graylog etc

Perf Monitoring

Monitor patterns so that application performance can be tracked & alerted for issues

1. APM tools like AppDynamics, NewRelic etc have agents running with the Microservice that PUSH data to monitoring service
2. Tools like Prometheus PULL metrics from the Microservice

Distributed Tracing

Follow a single logical request (the **trace**) as it spans through multiple services (each being a **span**) that get called – specially relevant for Microservice chaining and aggregation
Eg: Zipkin, Jaeger, Appdash

Health Check

Provide specific endpoint (such as /health) that provides information on whether the service is healthy or not.
Critical to orchestrate APIs using container orchestration platform like Kubernetes
Eg: Spring Actuator framework, socket based ping checks etc

#GABMUGPeru

Dapr

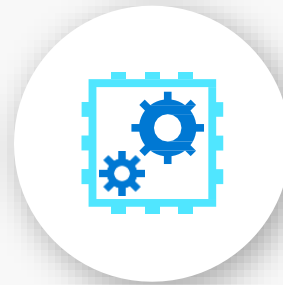


#GlobalAzure

¿Que es lo difícil acerca de los microservicios?



La necesidad de soportar muchos puntos de integración diferentes(cache, message queues, 3rd party APIs, secret stores)



Esto da como resultado el acoplamiento en el código.
Acoplado a un servicio específico y a un SDK



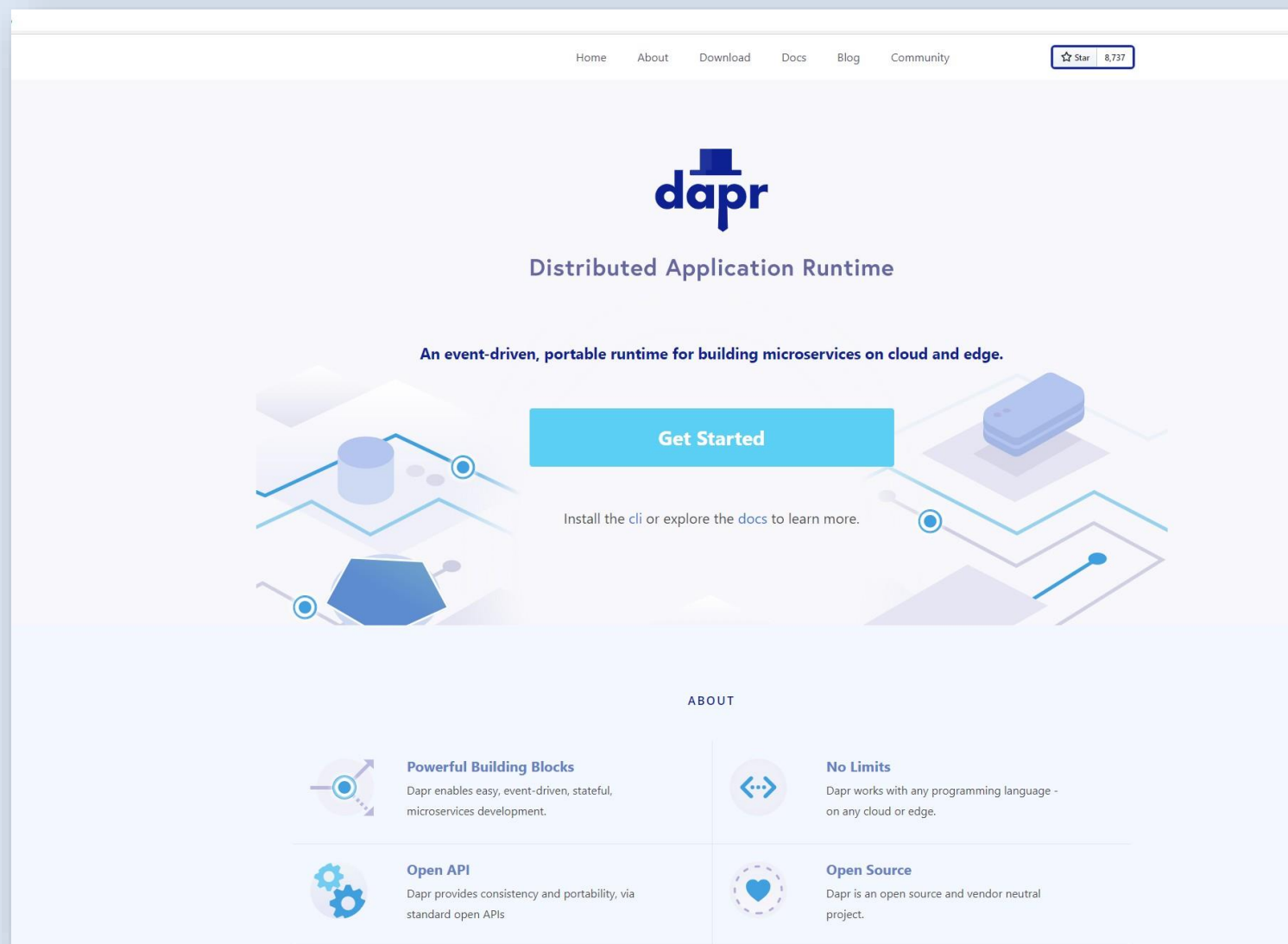
Muchos puntos diferentes para soportar el tracing, la configuración y la administración de secretos



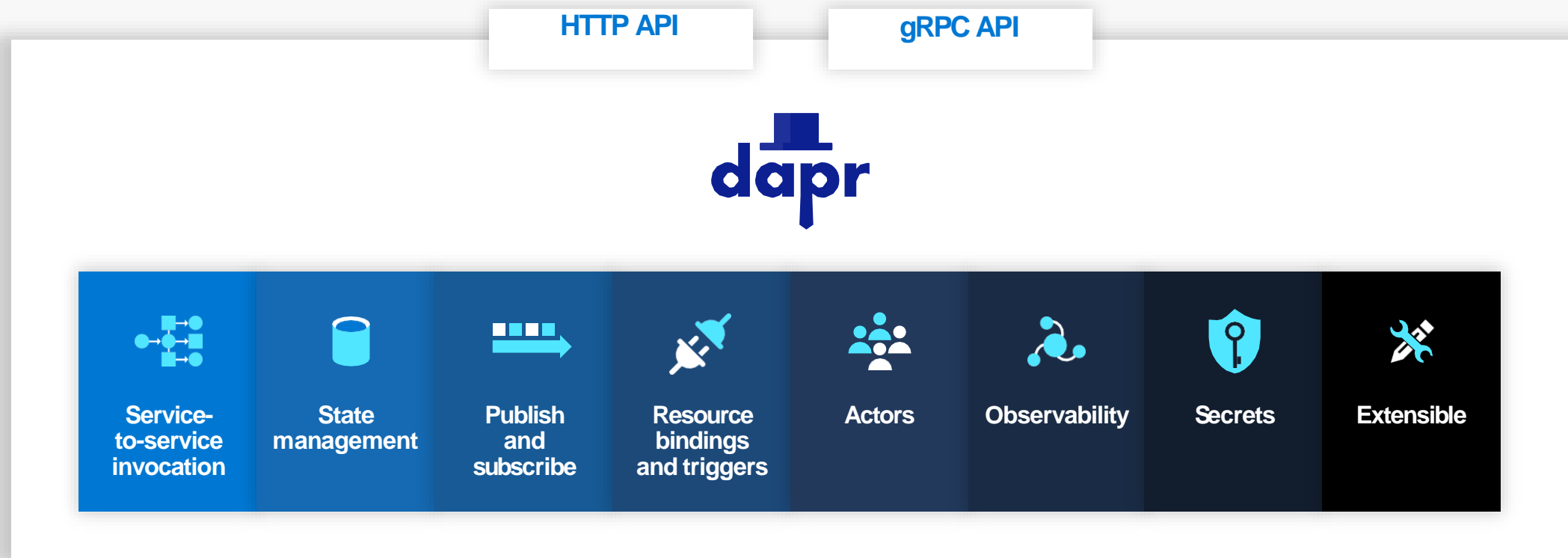
Distributed Application Runtime

Portable, event-driven, runtime for building distributed applications across cloud and edge

<https://dapr.io>

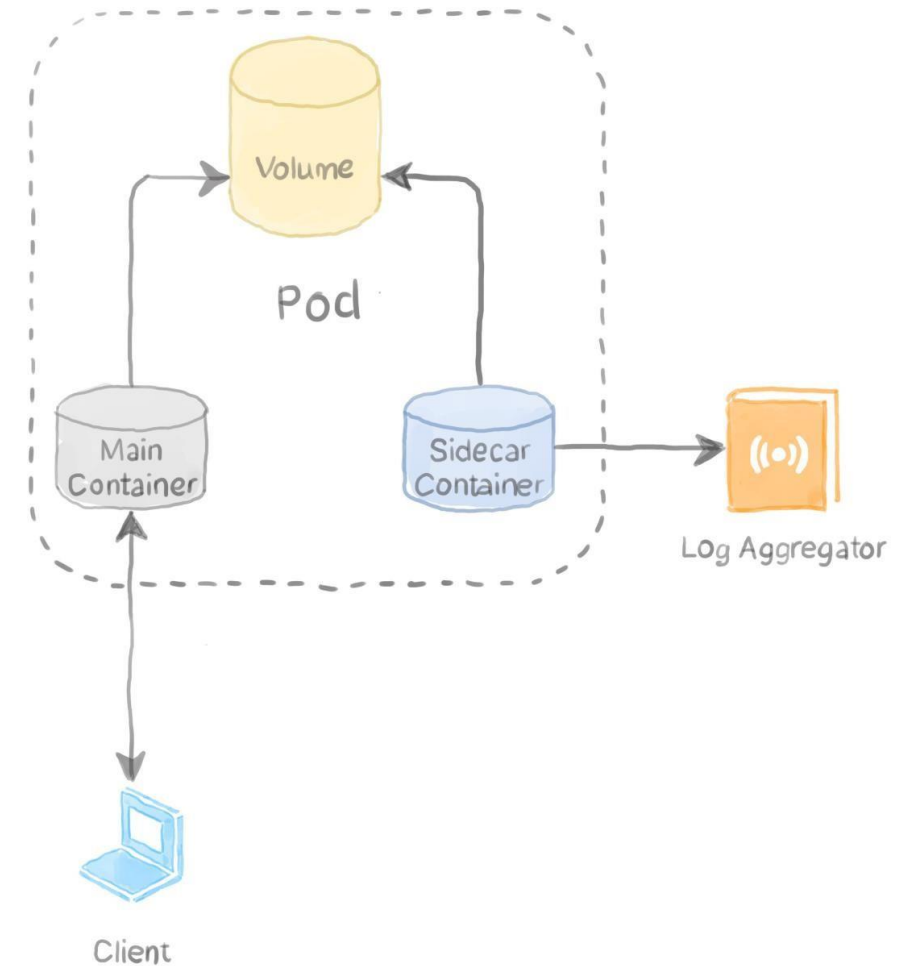


Bloques de construcción para Microservicios

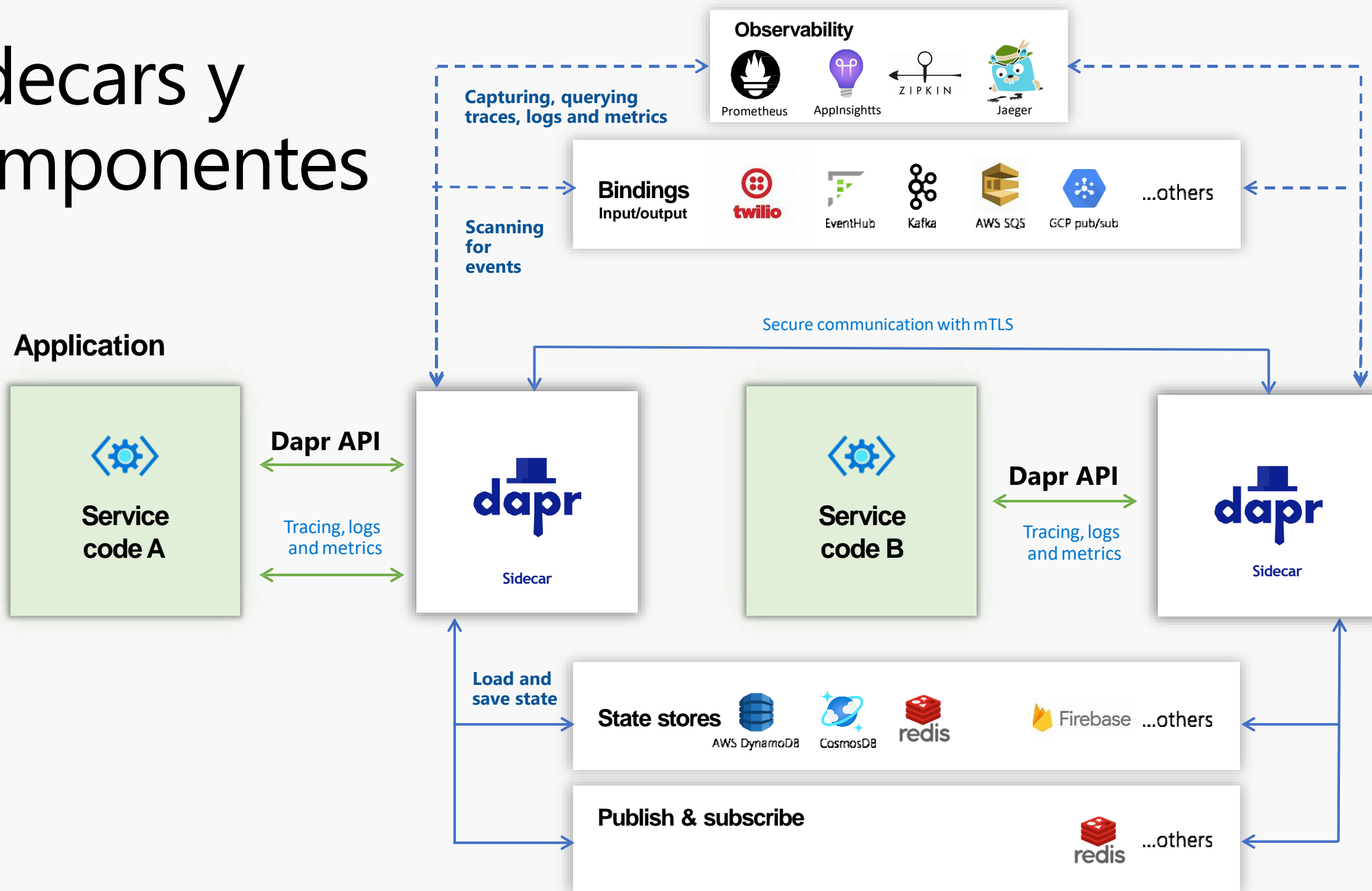


El patrón "sidecar"

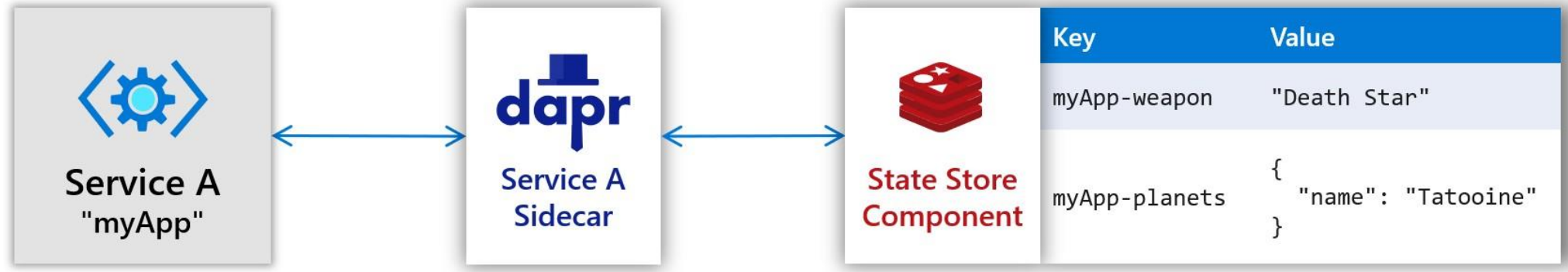
- El patrón sidecar es un patrón de un solo nodo compuesto por dos contenedores.
- El primero es el contenedor de aplicaciones. Contiene la lógica central de la aplicación. Sin este contenedor, la aplicación no existiría.
- Además del contenedor de aplicación, hay un contenedor sidecar.



Sidecars y componentes



State Store building block



POST
<http://localhost:3500/v1.0/state/myStateStore>

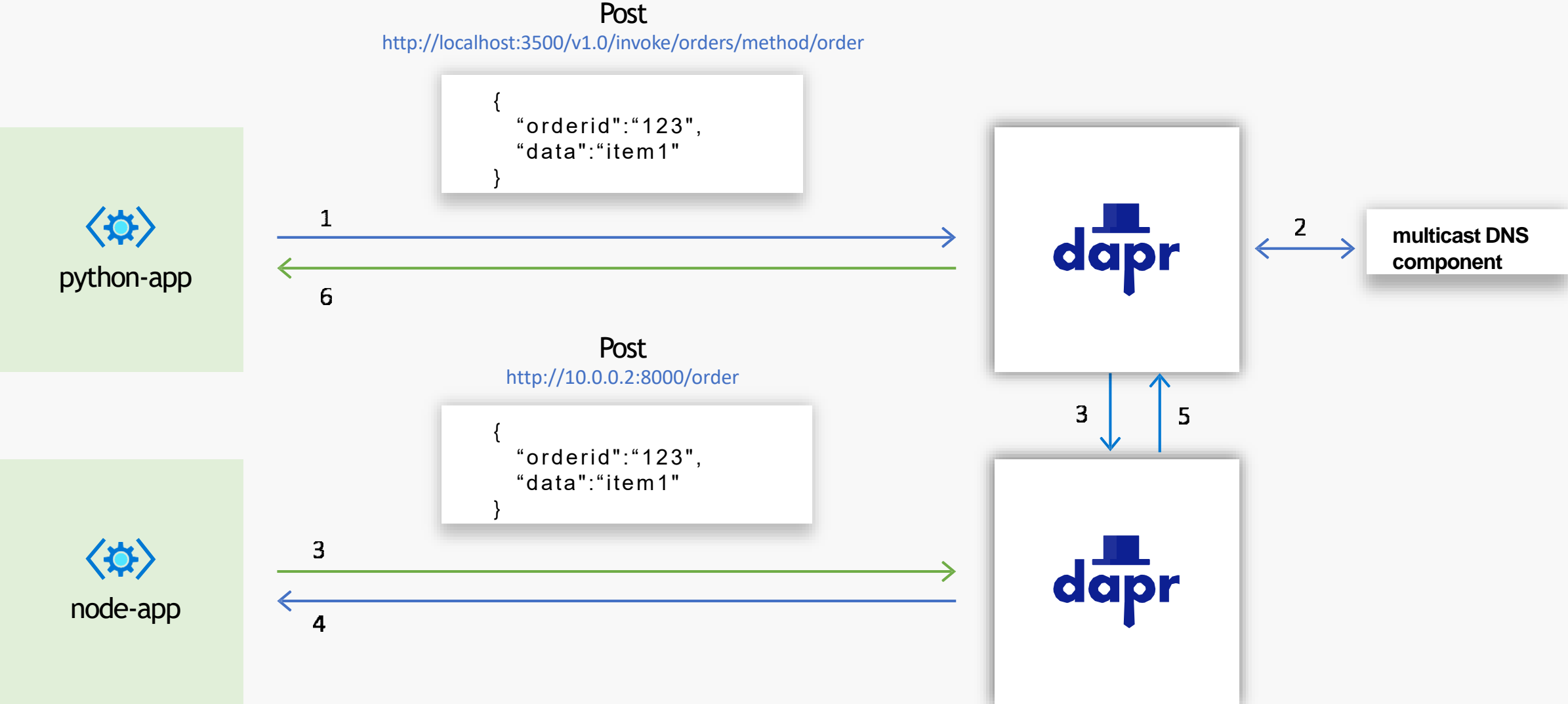
```
[{
  "key": "weapon",
  "value": "Death Star"
},
{
  "key": "planets",
  "value": {
    "name": "Tatooine"
  }
}]
```

GET
<http://localhost:3500/v1.0/state/myStateStore/planet>

```
{"name": "Tatooine"}
```

Dapr building blocks

Service invocation



¿Qué es Azure Container App?

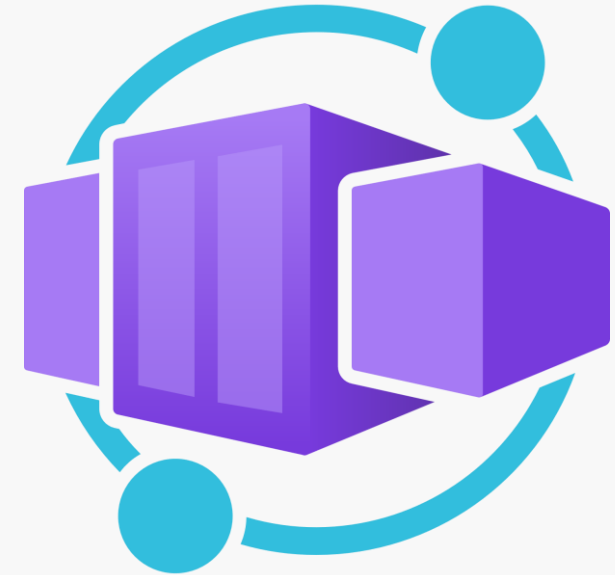
Azure Container Apps

Contenedores serverless para microservicios

Construye apps modernas con open source

Foco en las apps, no infraestructura

Porta sin problemas a Kubernetes



kubernetes

#GABMUGPeru

Azure Container Apps + Dapr



#GlobalAzure

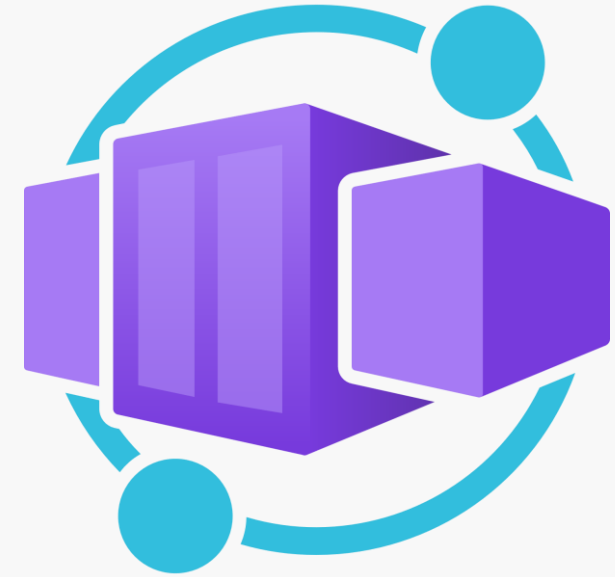
Azure Container Apps

Contenedores serverless para microservicios

Construye apps modernas con open source

Foco en apps, no infraestructura

Porta sin problemas a Kubernetes



kubernetes

Diagrama de la solución

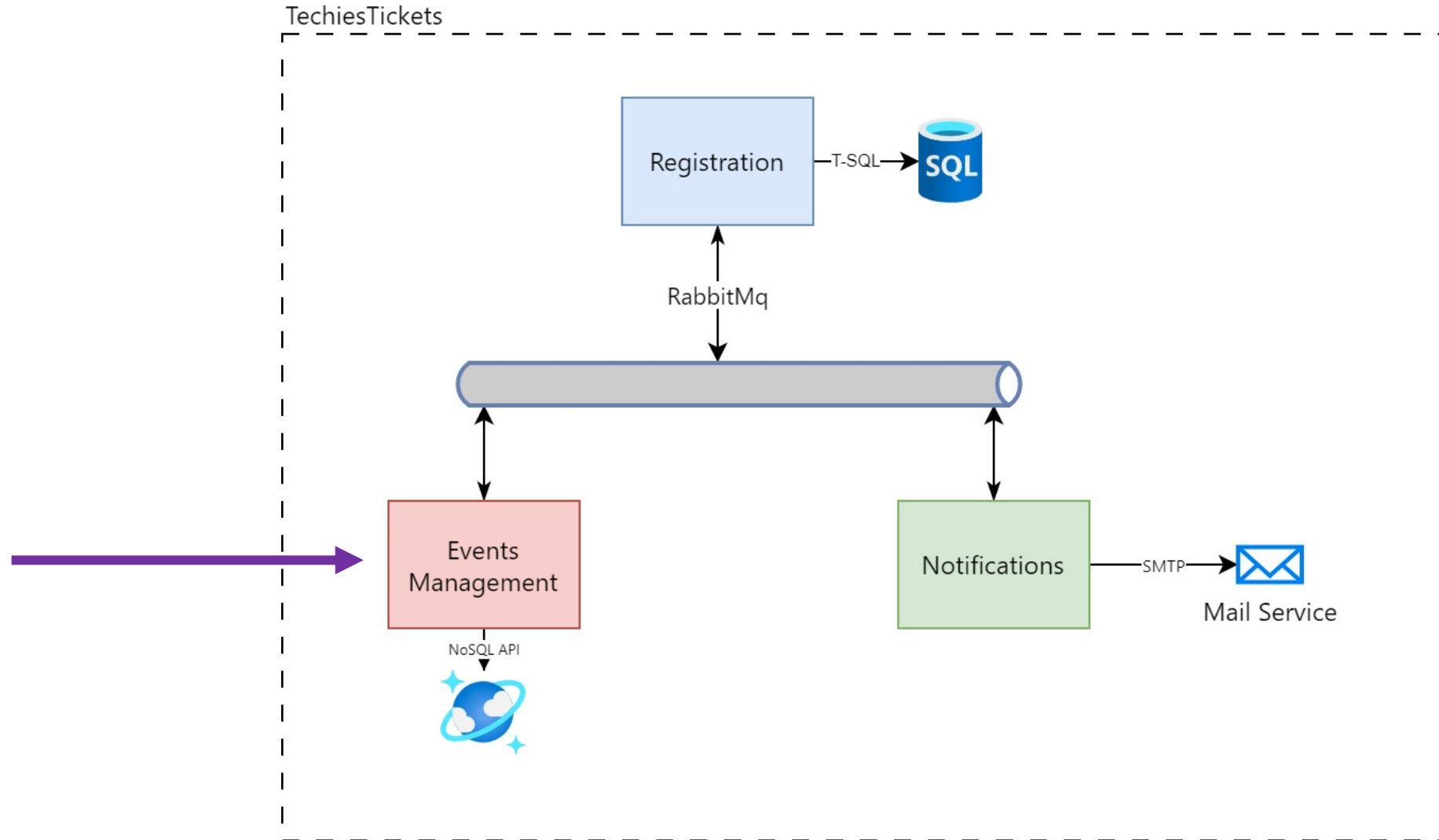
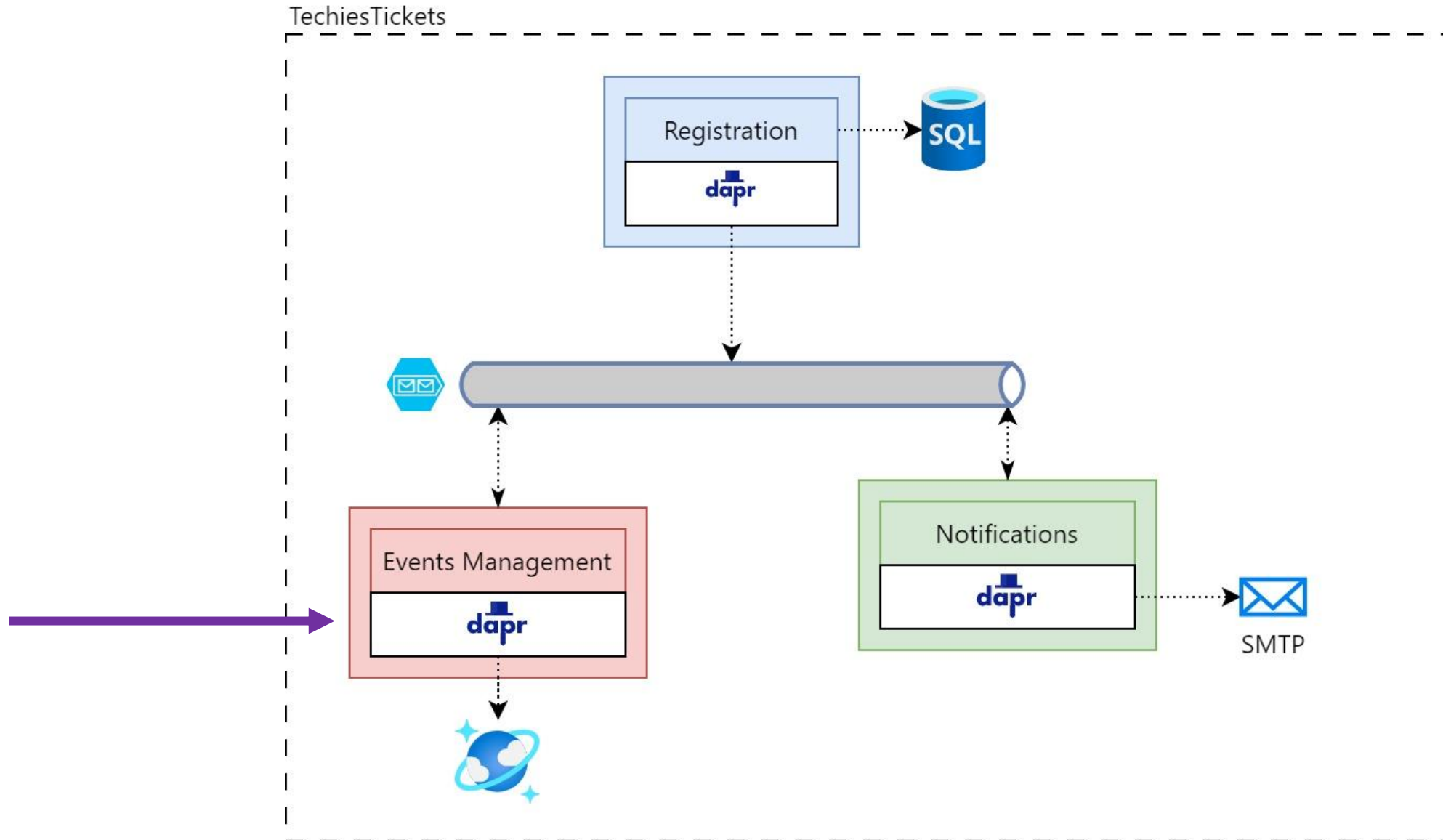


Diagrama de la solución



Call to Action

- Azure Container Apps

<https://docs.microsoft.com/en-us/azure/container-apps/overview>

- Código de ejemplo en Github @

<https://github.com/jesulink2514/container-apps-microservice-sample>