MTG

Shaping next generations of architectures with Dapr

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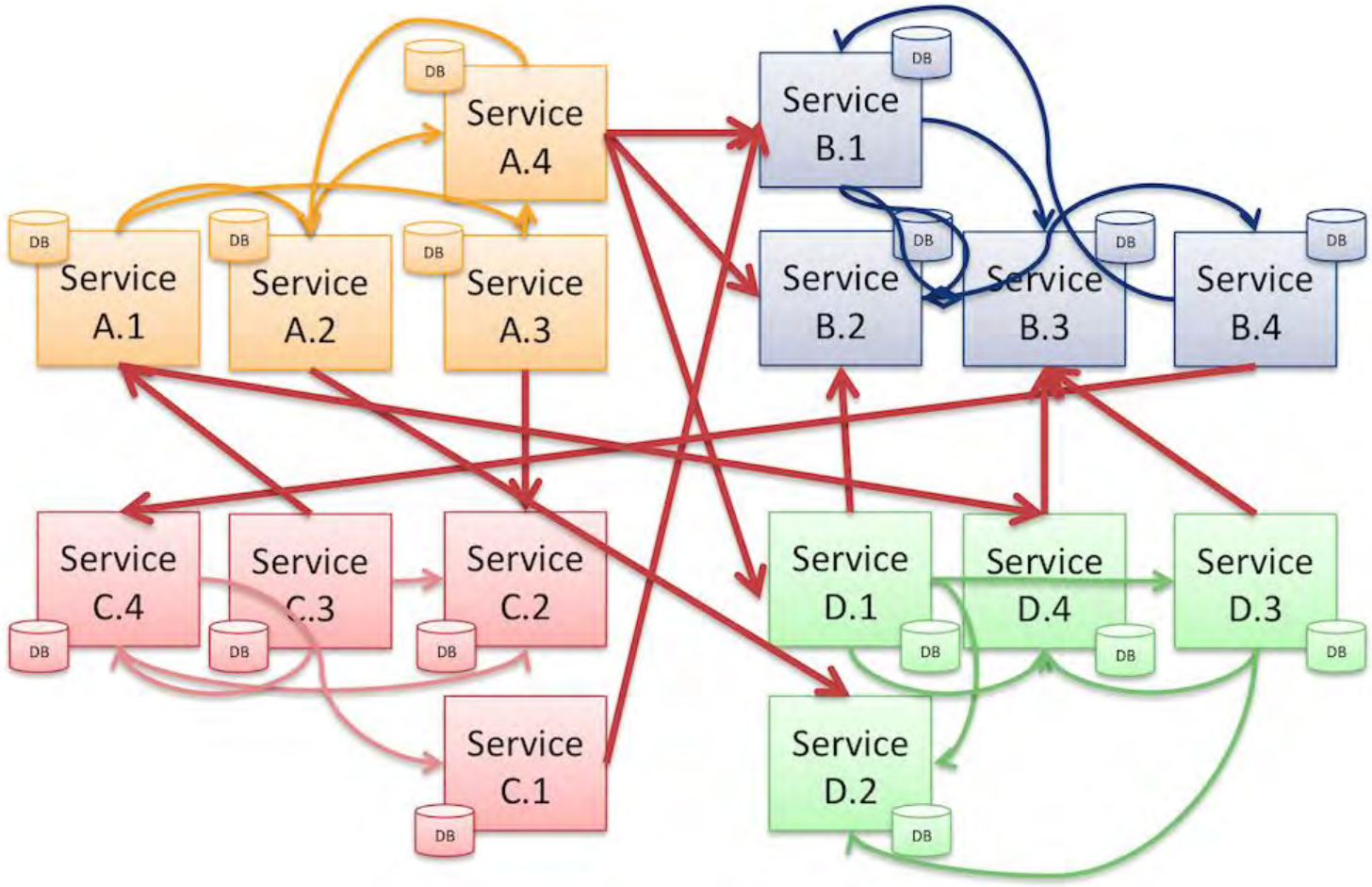
Microservices architecture

Why microservices ?

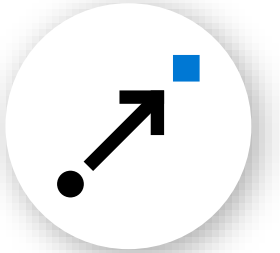
- Focus on a specific business aspect
- Autonomy
- Flexibility
- Scalability
- Independent development
- Independent deployment
- Smaller, but more efficient

Difficulties

- Debugging process
- Testability
- Architectural complexity
- Service interdependencies
- Managing flows inside applications



Microservices architecture



Difficulty of migrating from a **monolithic block** to a **microservices** architecture

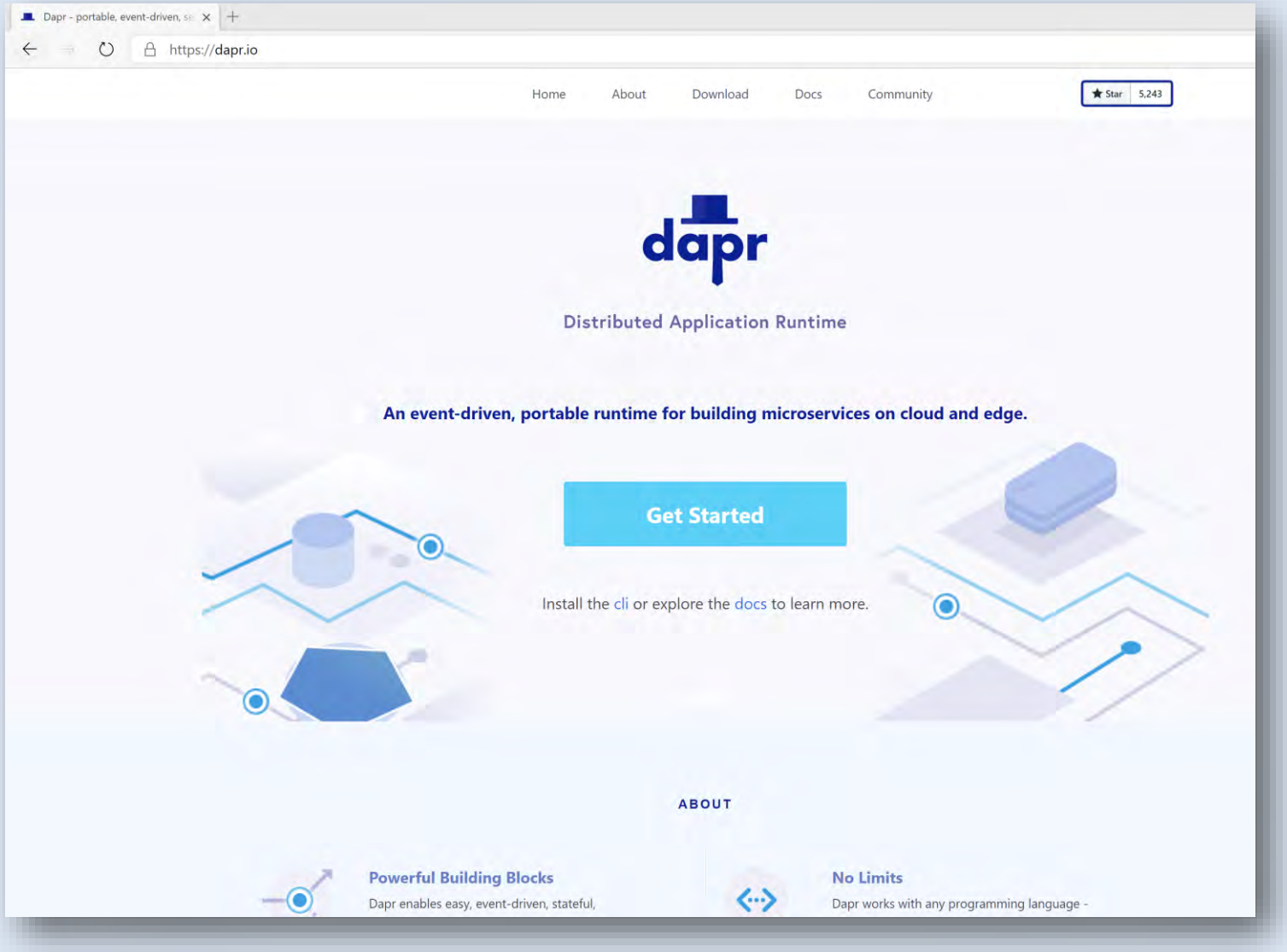
Unsuitable *runtime* and **limited** language support not oriented for microservices

Application tied to a **specific** infrastructure/platform with **limited portability** to Cloud or Edge

Distributed Application Runtime

Portable, event-driven runtime for building distributed applications in the Cloud and at the Edge

https://dapr.io



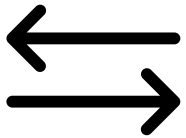
Dapr objectives

Best practices
Building blocks

Any Language
or Framework

Community Driven
Non-commercial

Standards adoption



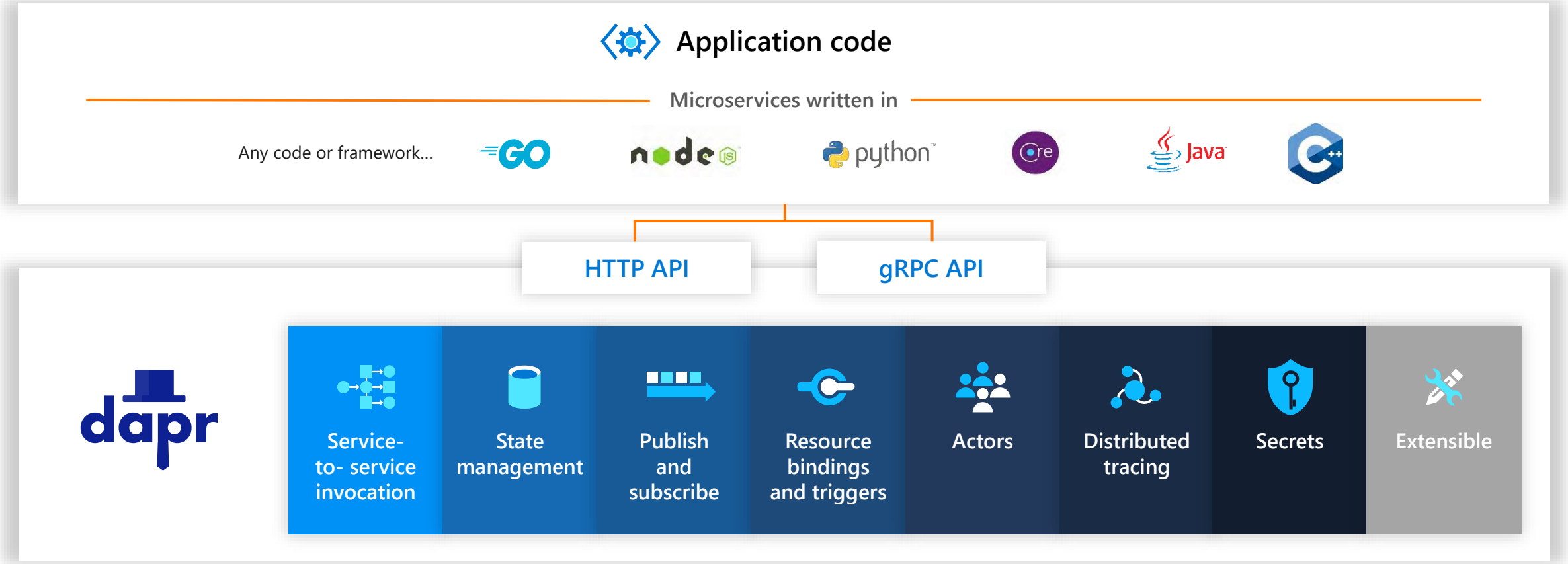
Consistent, Portable,
open APIs

Plateform agnostic
Cloud + Edge

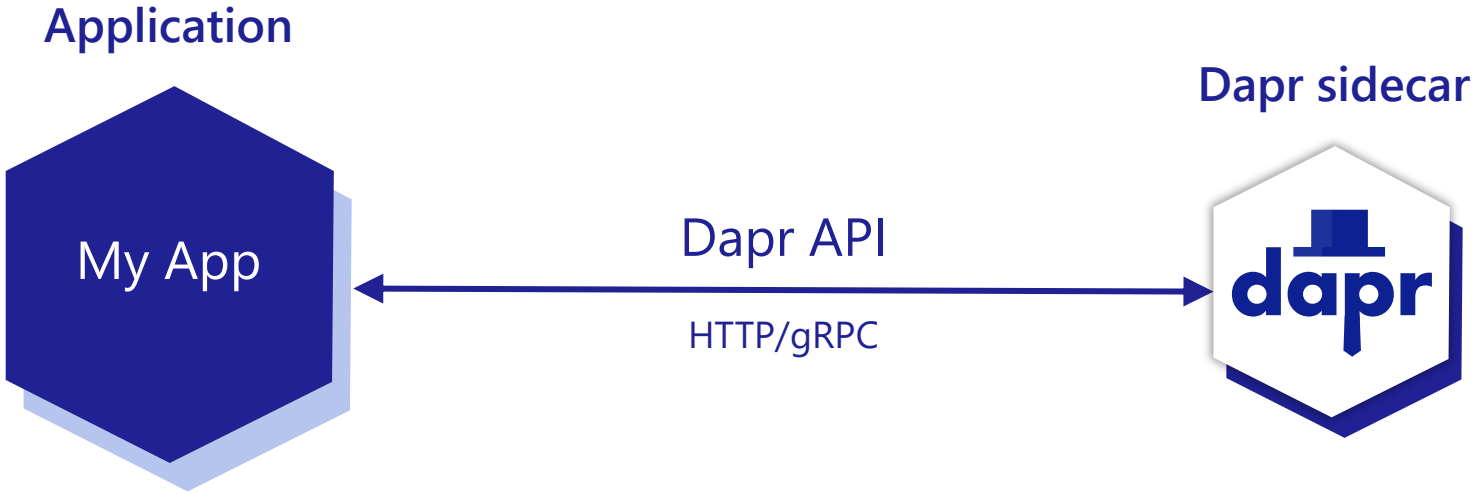
Extensible with pluggable
components

Dapr basis

- Standard API reachable through HTTP or gRPC from the code
  - http://localhost:3500/v1.0/state/inventory/orderkey
  - http://localhost:3500/v1.0/invoke/myapp/method/neworder
- Running locally as a “sidecar” component loaded at runtime for each service

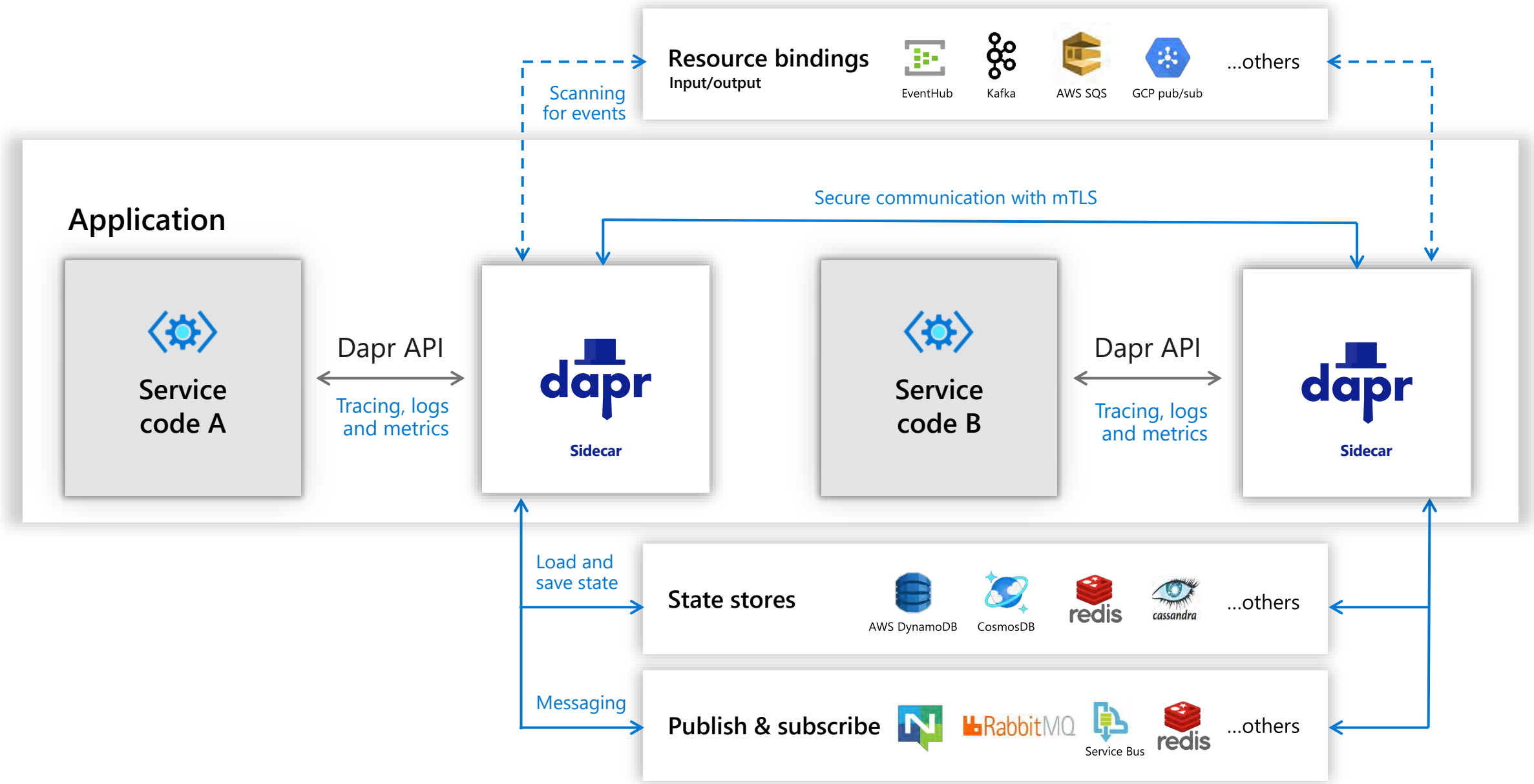


Sidecar model



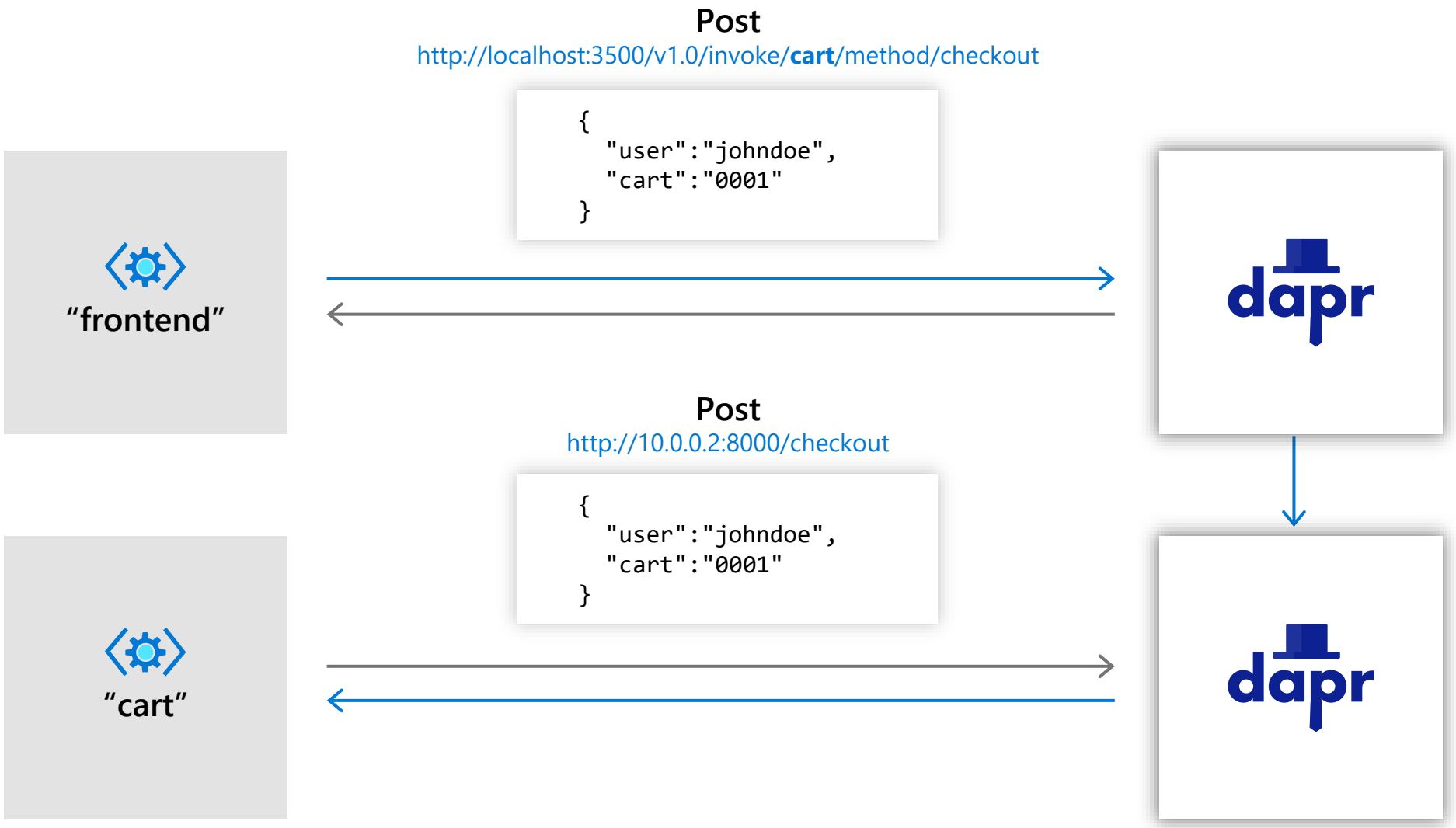

```
POST http://localhost:3500/v1.0/invoke/cart/method/neworder

GET http://localhost:3500/v1.0/state/inventory/item67

POST http://localhost:3500/v1.0/publish/shipping/orders

GET http://localhost:3500/v1.0/secrets/keyvault/password
```

Local example

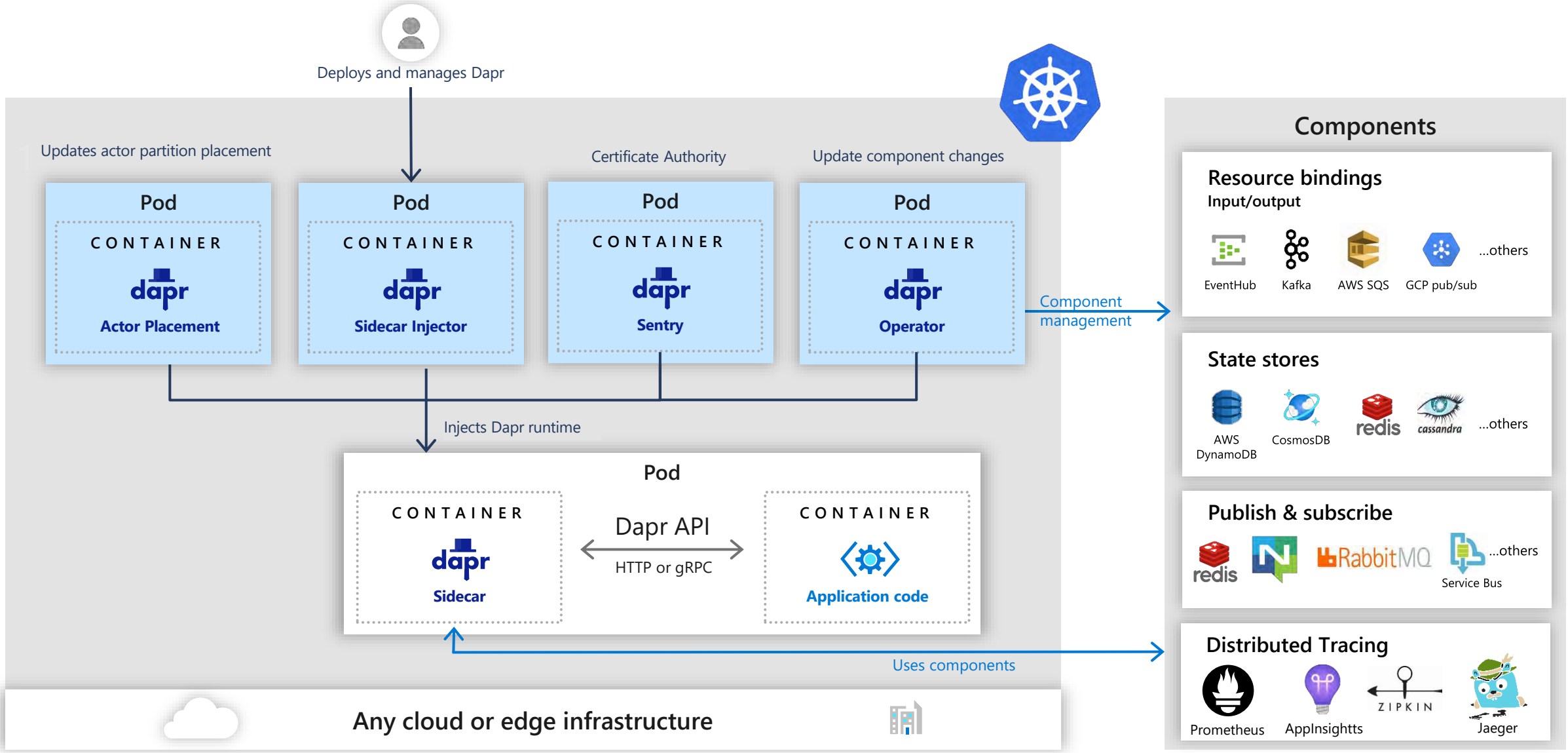


Dapr in local environment
DEMO

Service invocation



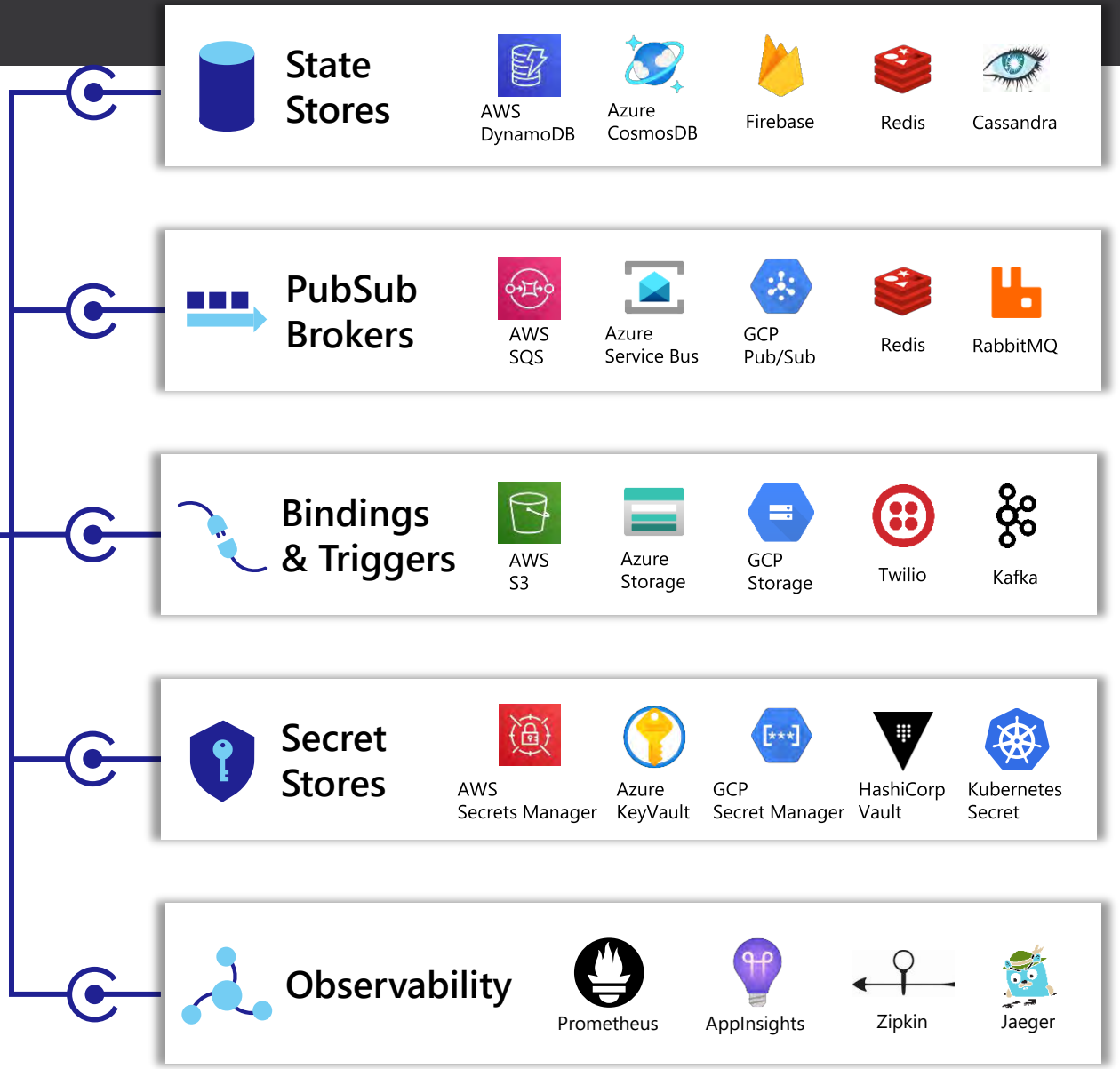
Kubernetes example



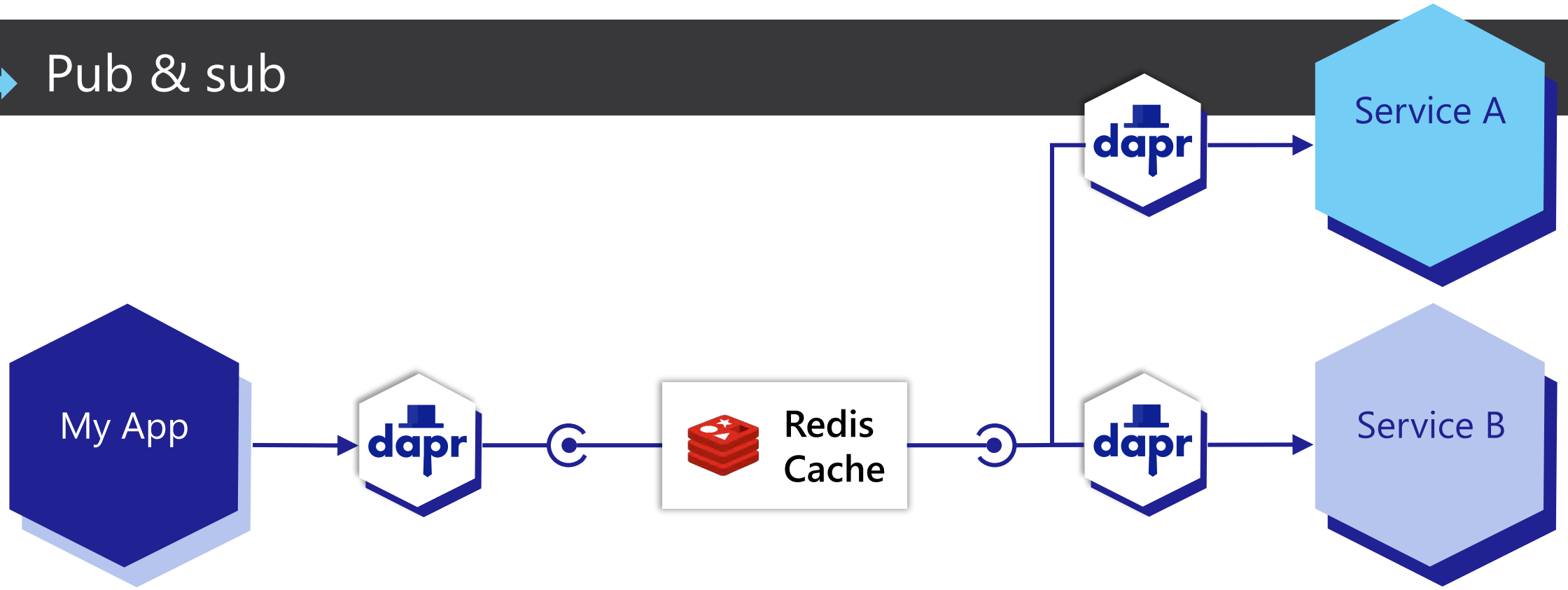
Dapr components

YAML files with connection details for each services

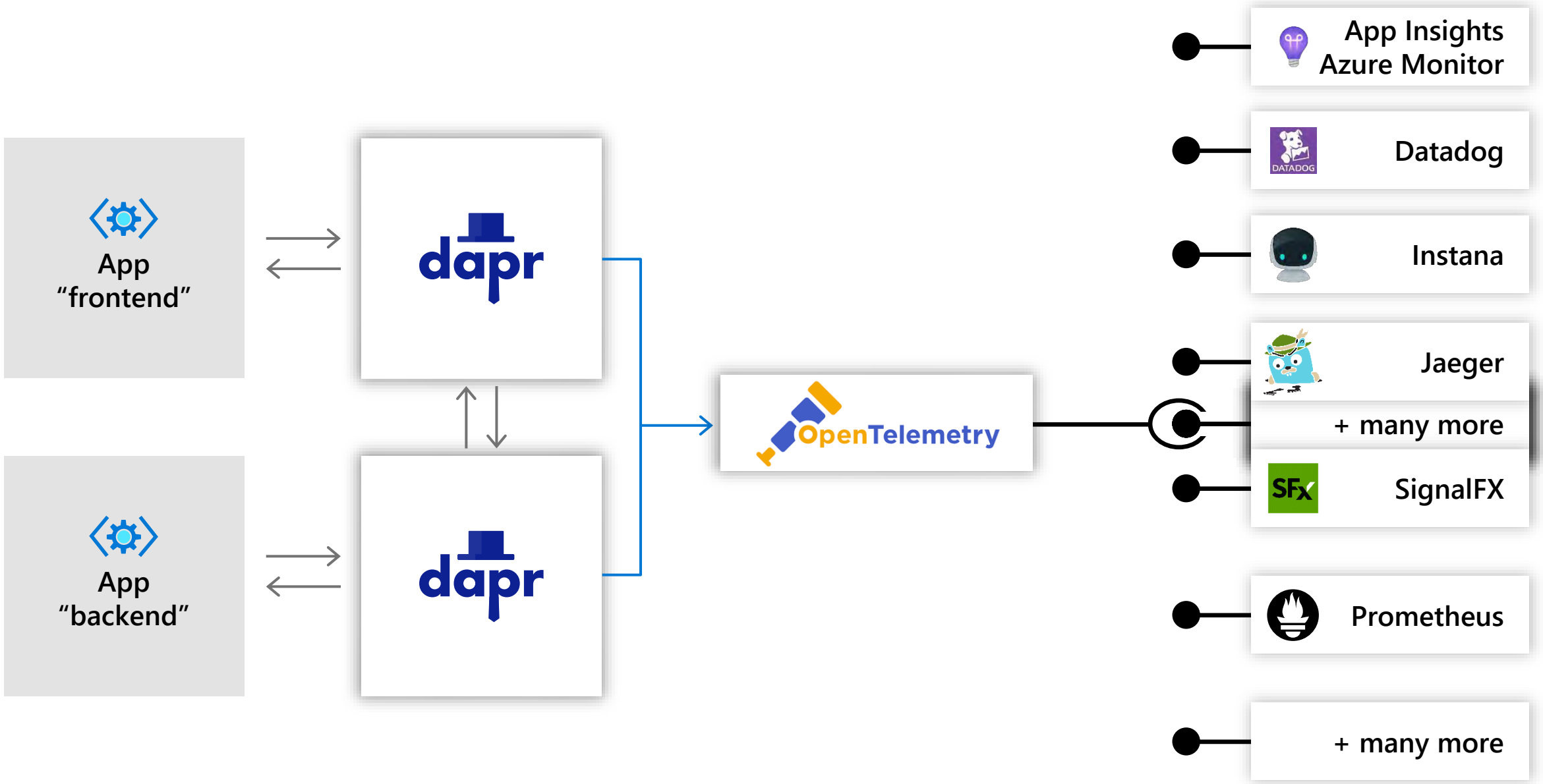
More than 70 components available



Pub & sub


Service A
dapr
My App
dapr
Redis
Cache
dapr
Service B
POST
http://localhost:3500/v1.0/publish/orders/processed
POST
http://10.0.0.2:8000/orders
http://10.0.0.4:8000/factory/orders
{"data":"Hello World"}
{"data":"Hello World"}

Insights *gathering* with common trunc



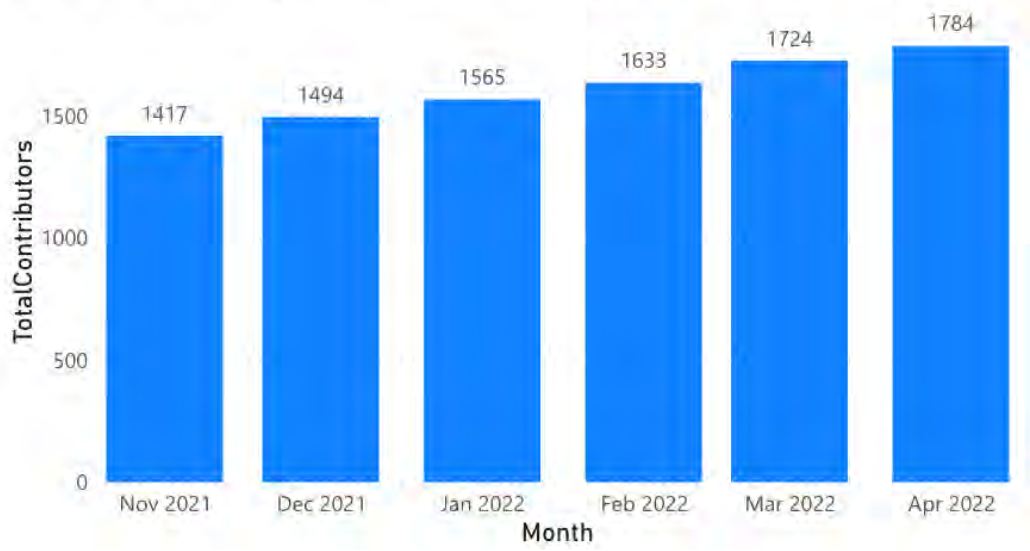
CNCF & Community

CLOUD NATIVE
COMPUTING FOUNDATION

Nov 2024: Accepted as **Graduated** CNCF Project

17.9k GitHub stars	1810 Contributors	97 Community Components
+1M Docker Hub monthly pulls	4k Discord members	+10k Monthly Docs views

Contributor growth



Contributing organizations include:

Microsoft vmware intel
HUAWEI Alibaba Cloud ZEISS BOSCH
Tencent 腾讯 HashiCorp Man Diagrid

Questions or feedbacks ?

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