One API to rule them all: serverless Dapr

@marcduiker

Marc Duiker

Sr Dev Advocate

Diagrid

Azure MVP

Dapr Community Manager

❤️ pixel art

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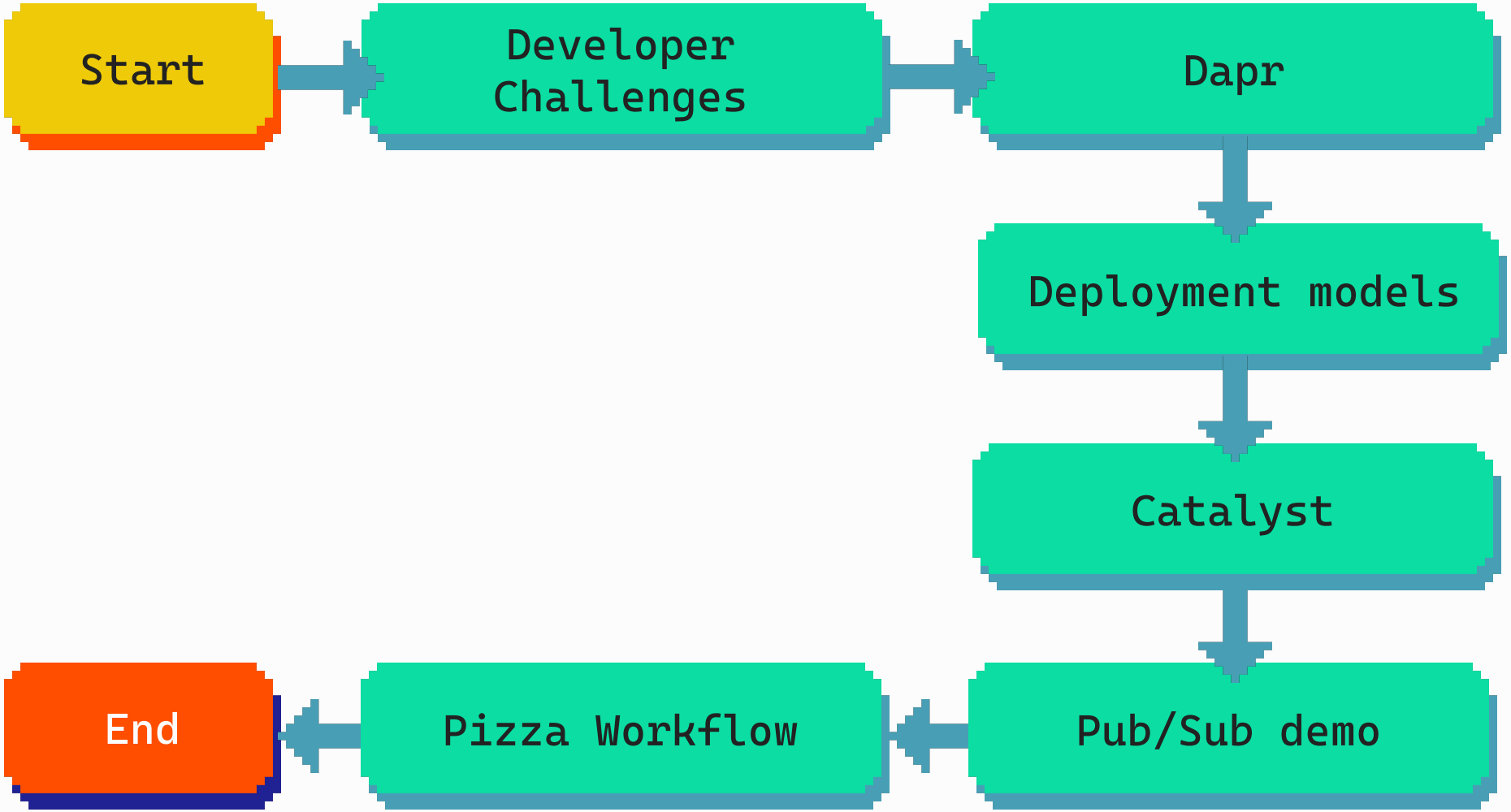
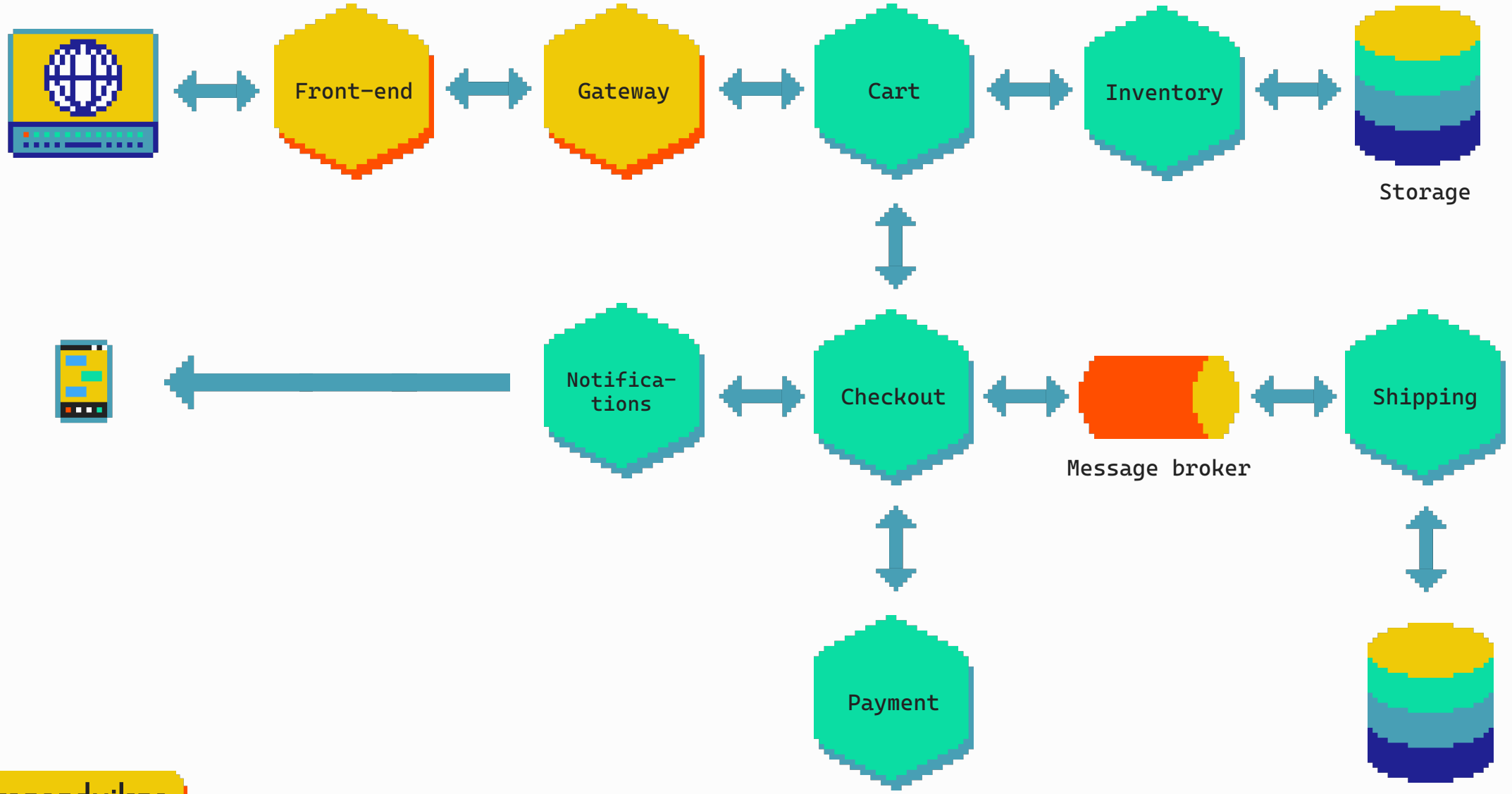
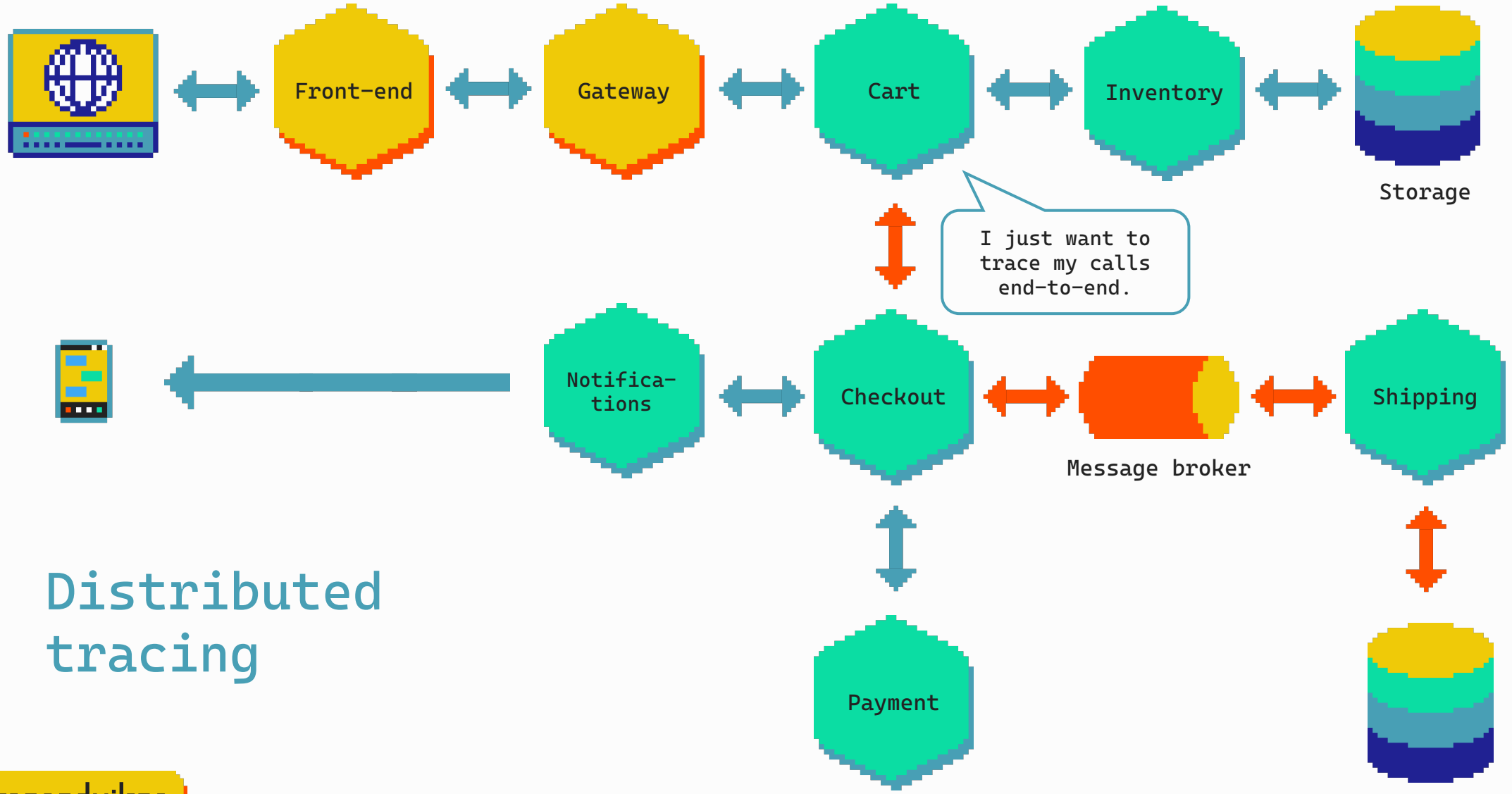

Start
Developer Challenges
Dapr
Deployment models
Catalyst
Pub/Sub demo
Pizza Workflow
End

Distributed apps

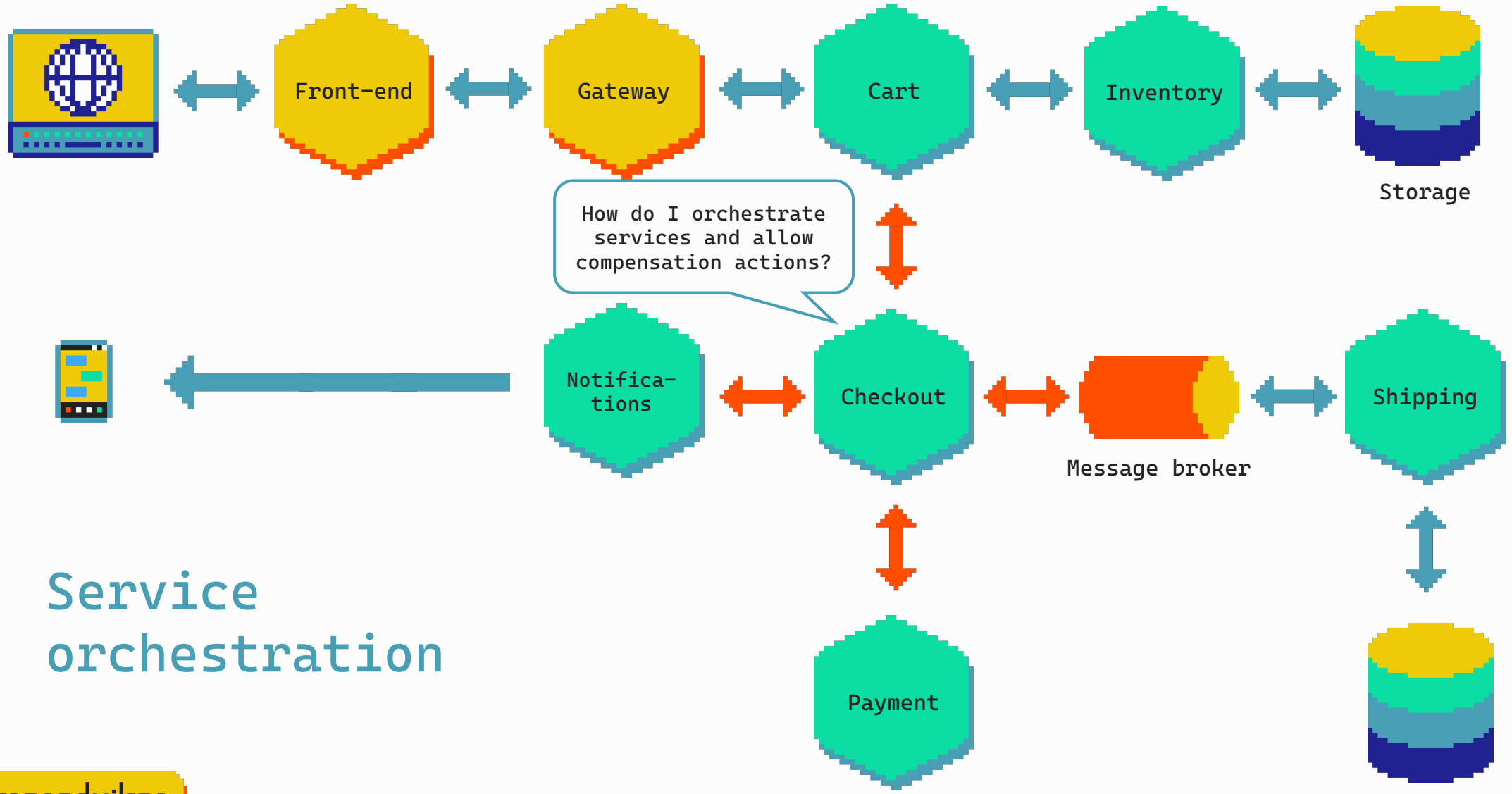


Developer challenges



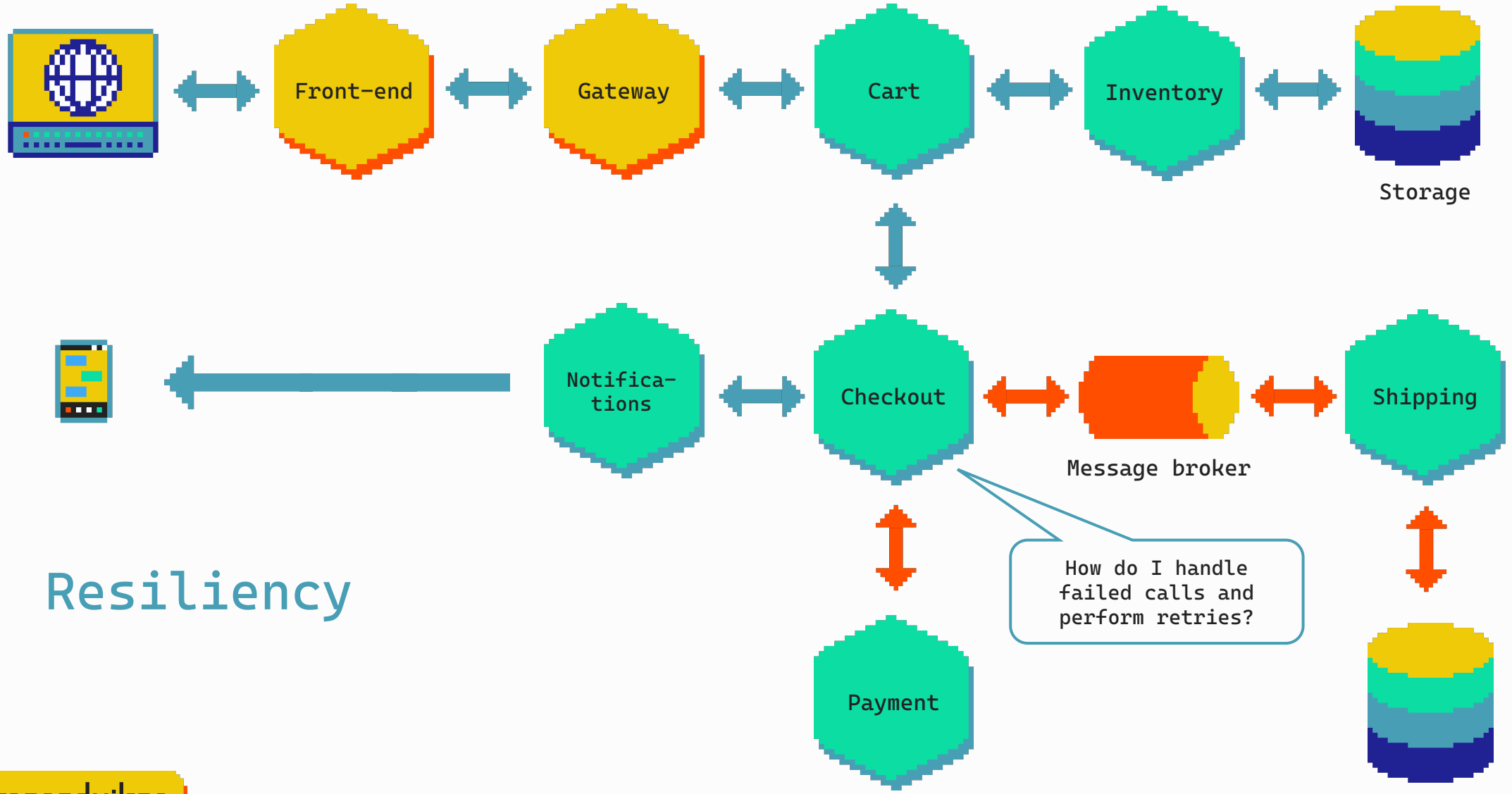
Distributed tracing

Developer challenges



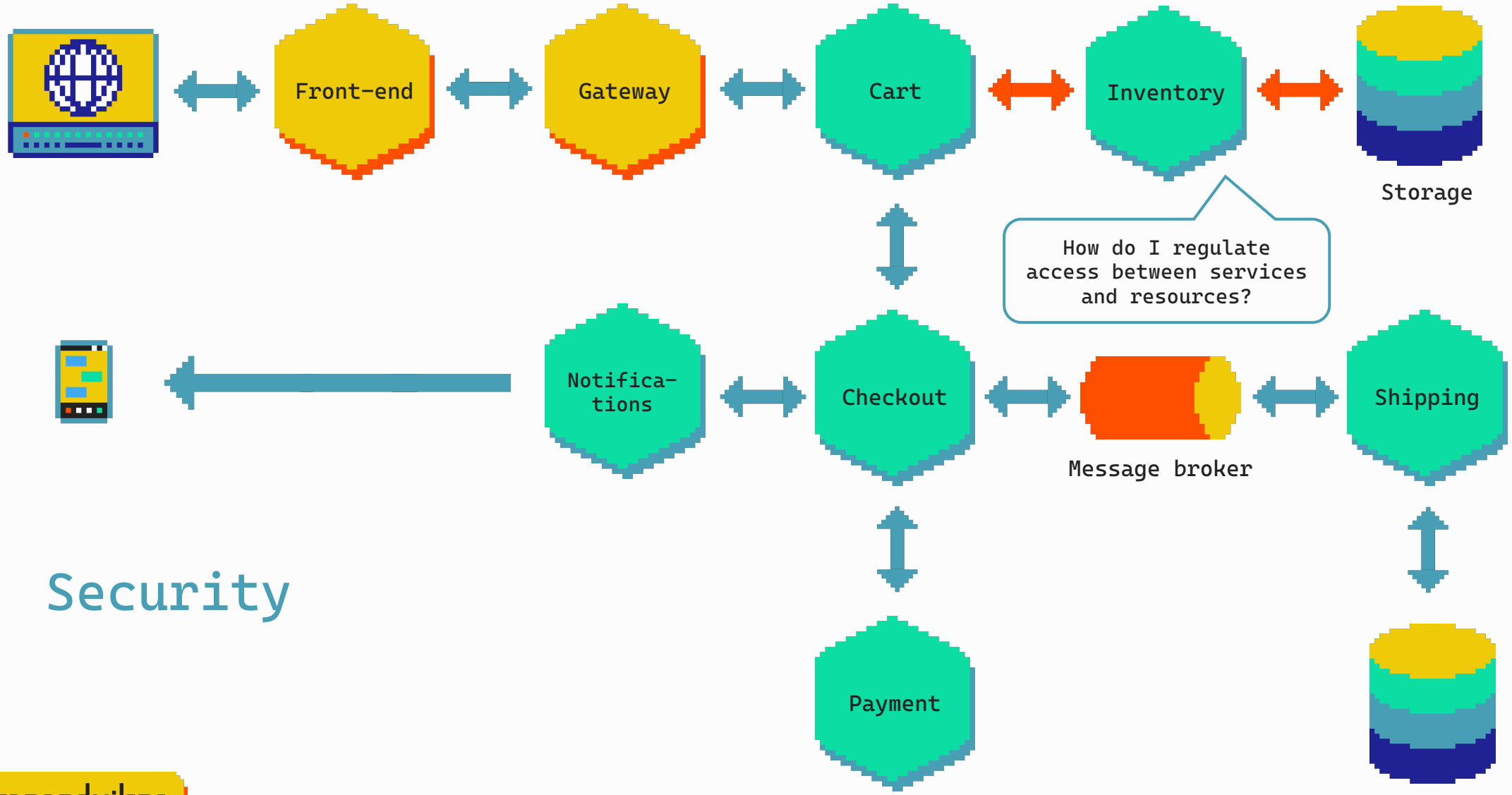
Service orchestration

Developer challenges



Resiliency

Developer challenges



Security

Distributed
application
runtime

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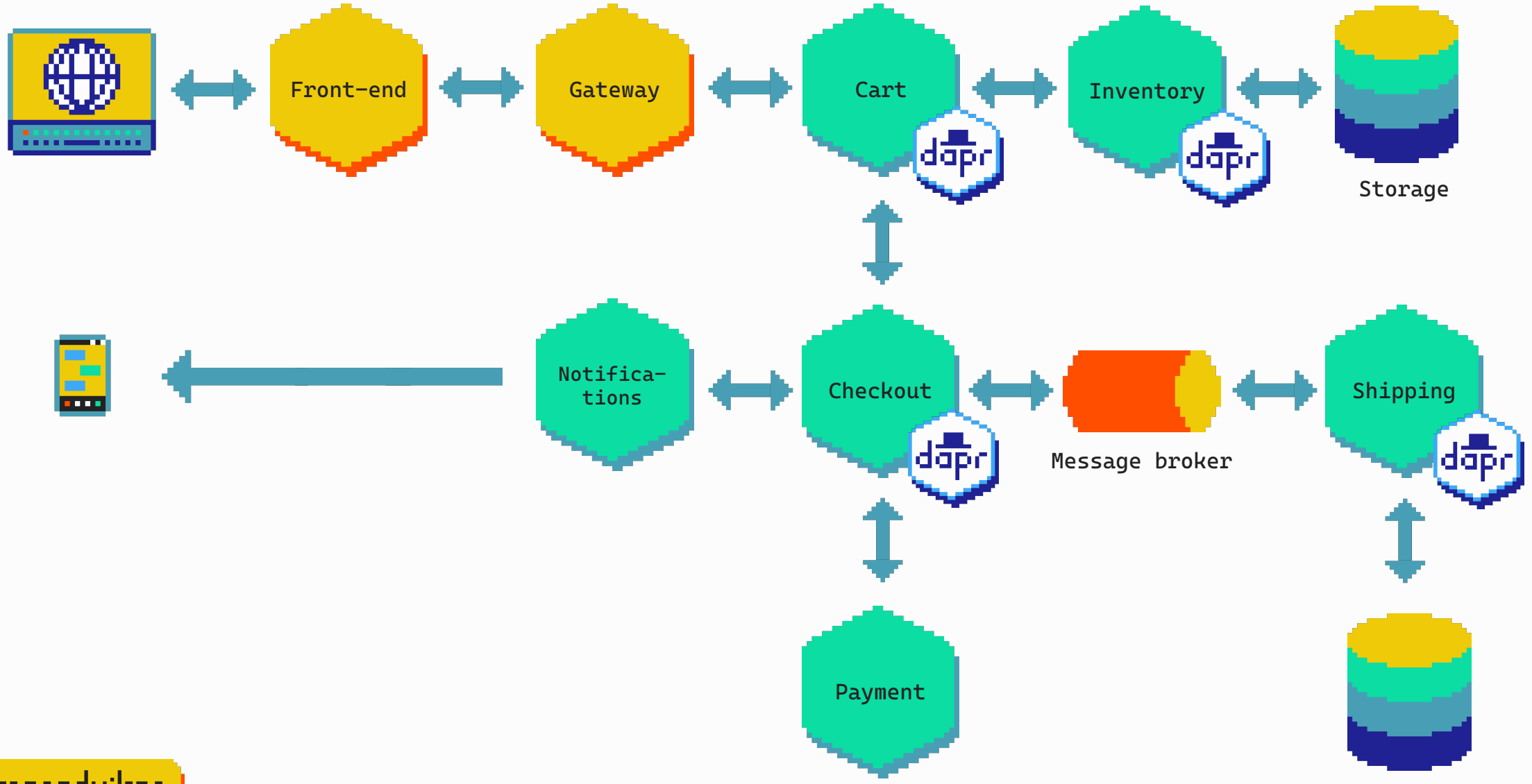
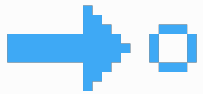
Built-in security,
resiliency and observability
capabilities.

Distributed apps

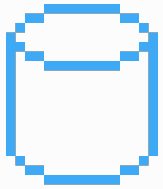


Speeds up microservice development by providing an integrated set of APIs for communication, state, and workflow.

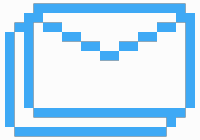
Dapr APIs



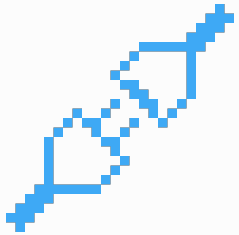
Service invocation



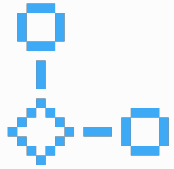
State Management



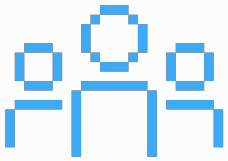
Publish & subscribe



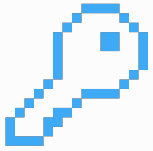
Bindings (input & output)



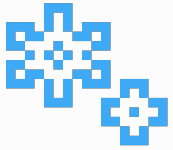
Workflow



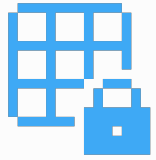
Actors



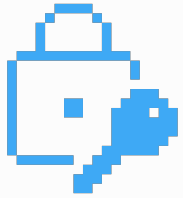
Secret Stores



External Configuration



Distributed Lock



Cryptography

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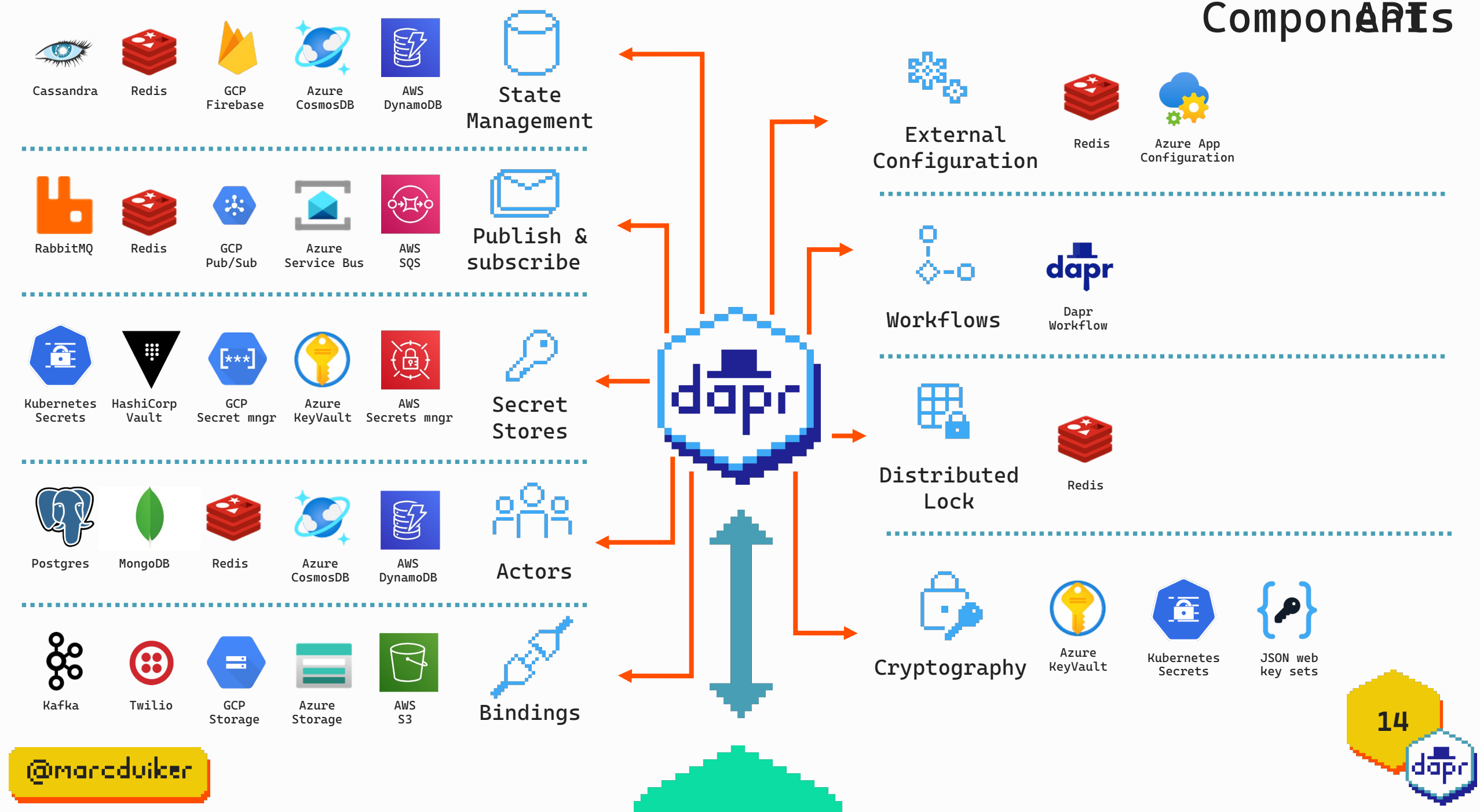
dapr

ComponAPIs



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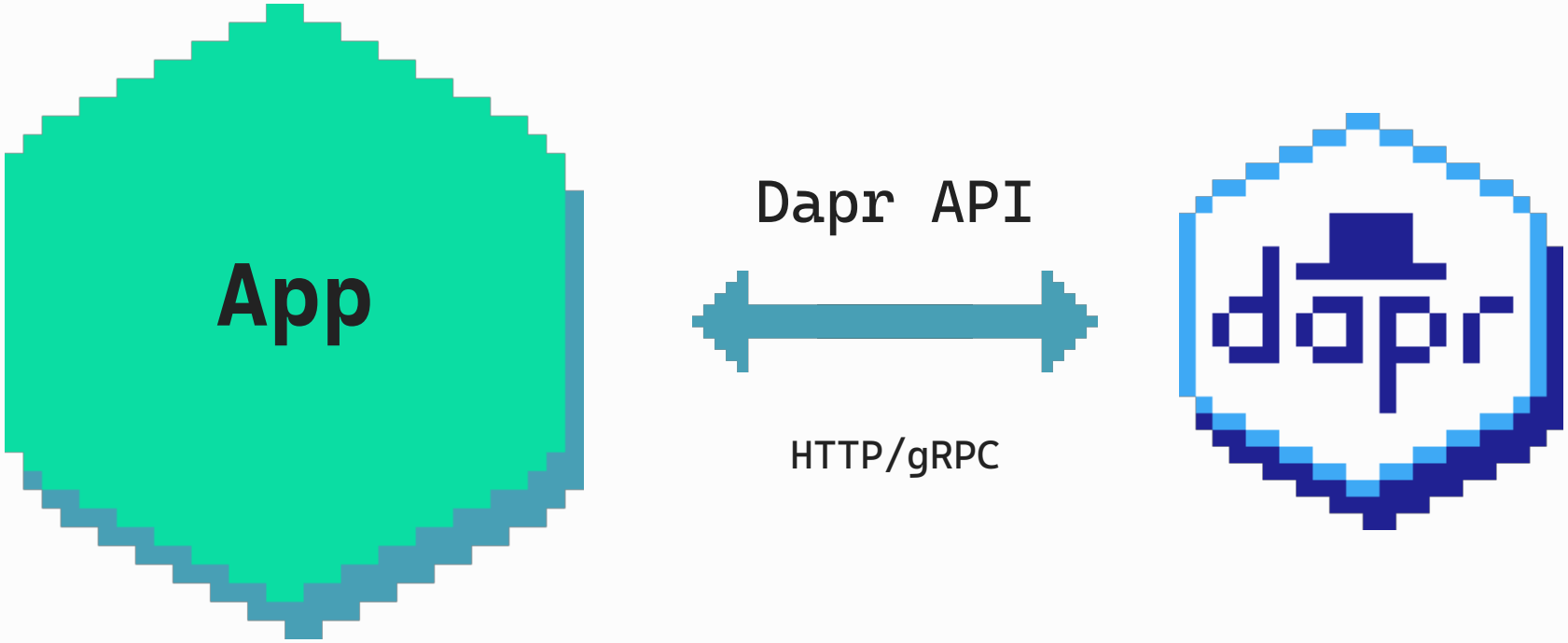

Application

Dapr process

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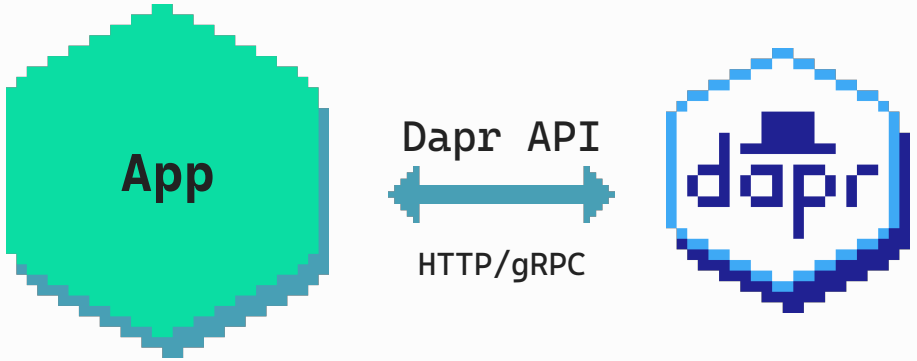


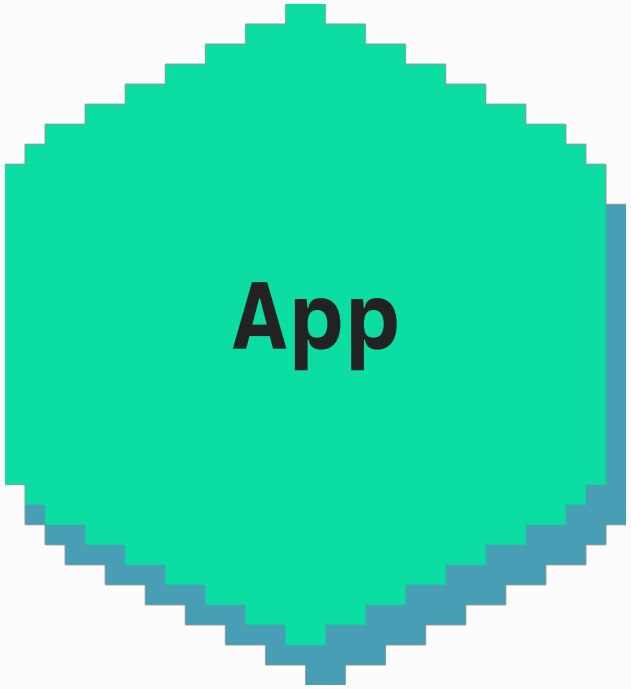

```
POST http://localhost:3500/v1.0/invoke/cart/method/order

GET http://localhost:3500/v1.0/state/inventory/item50

POST http://localhost:3500/v1.0/publish/mybroker/order-messages

GET http://localhost:3500/v1.0/secrets/vault/password42

POST http://localhost:3500/v1.0-beta1/workflows/dapr/businessprocess/start
```

Dapr is a runtime for building distributed applications across cloud and edge.

Azure Container Apps

virtual or
physical machines

Dapr deployment modes



Application

Dapr API

HTTP/gRPC

Dapr process
(where does it run?)

Dapr deployment models

Managed →

Virtual machines	Kubernetes + Dapr sidecar	Kubernetes + Dapr Shared	Serverless Containers	Serverless
			Azure Container Apps	Catalyst
You	You	You	Provider	Provider

Responsible for the Dapr process

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https://www.diagrid.io/blog/dapr-deployment-models

Diagrid Catalyst

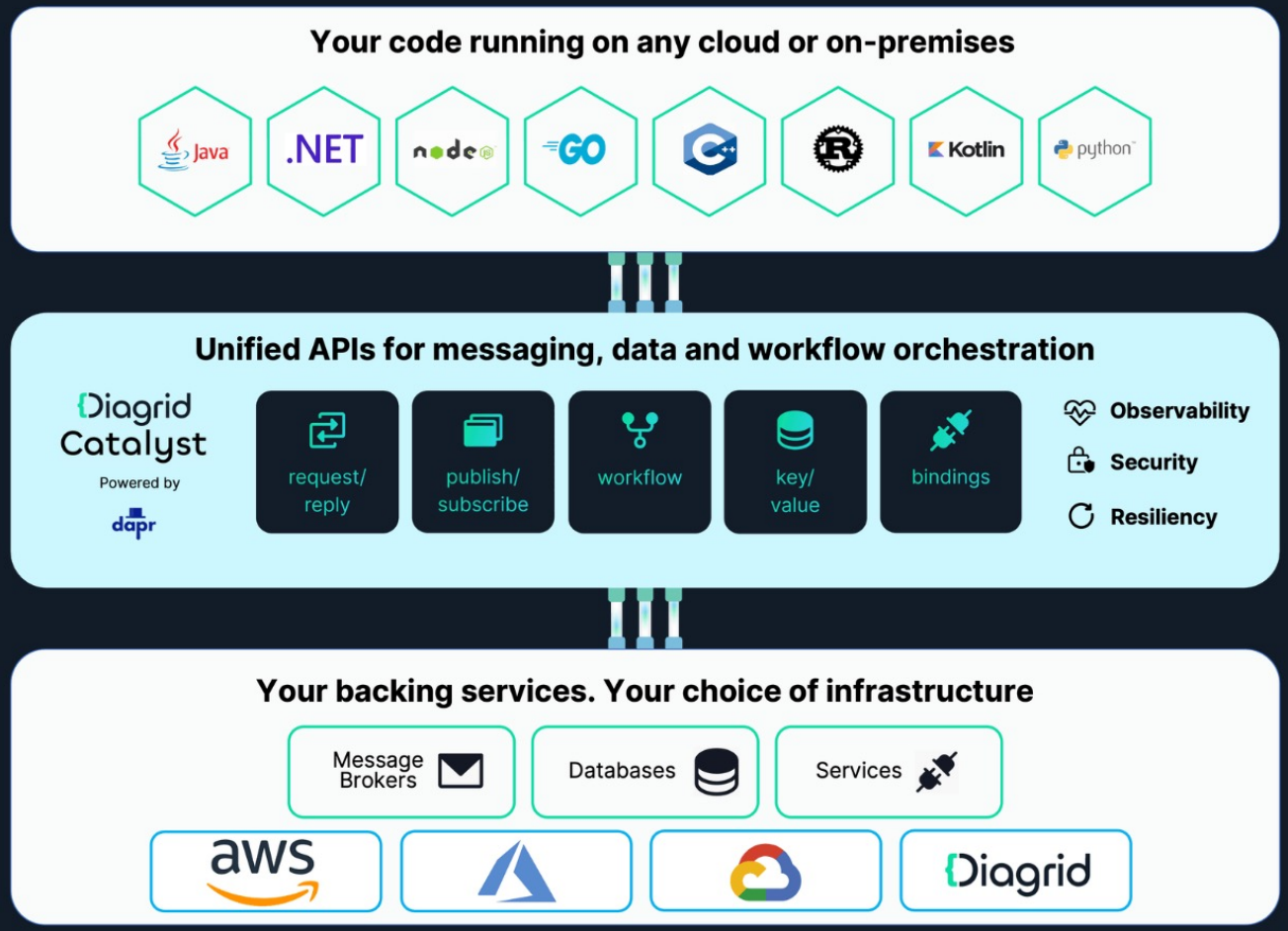
Stay up to date with everything Dapr with the Diagrid Newsletter. Subscribe

Catalyst

Unified APIs for Messaging, Data, and Workflow powered by open-source Dapr

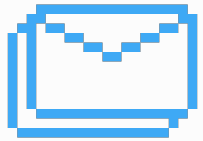
Make complex architectures simple, reliable and secure with APIs that connect to your existing infrastructure and work with your existing code

Join early access

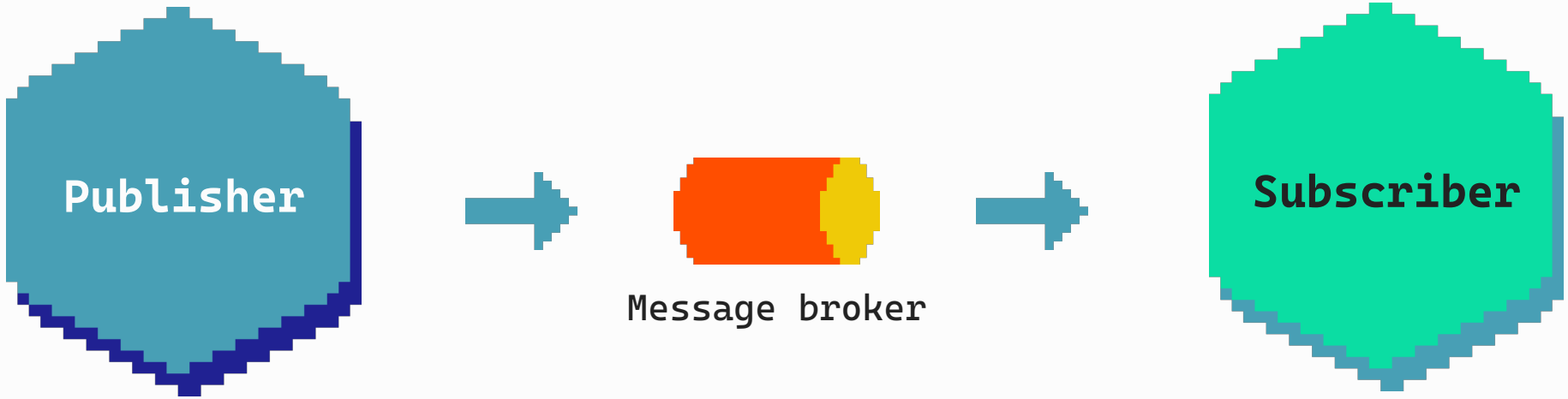


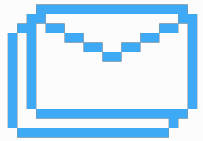
Pub/Sub Demo

https://docs.diagrid.io/catalyst/quickstarts/publish-subscribe

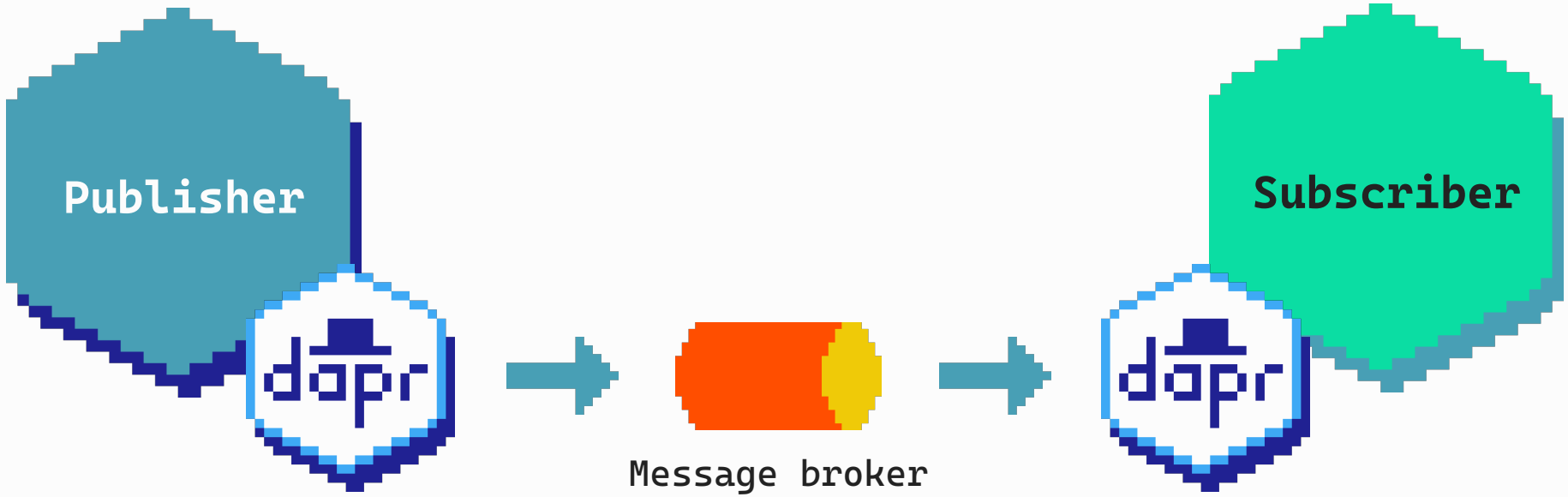


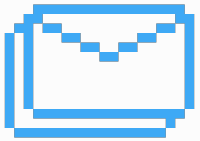
Pub/Sub API





Pub/Sub API





Pub/Sub API

Publisher

Subscriber

publisher

subscriber

App ID

Message broker

App ID

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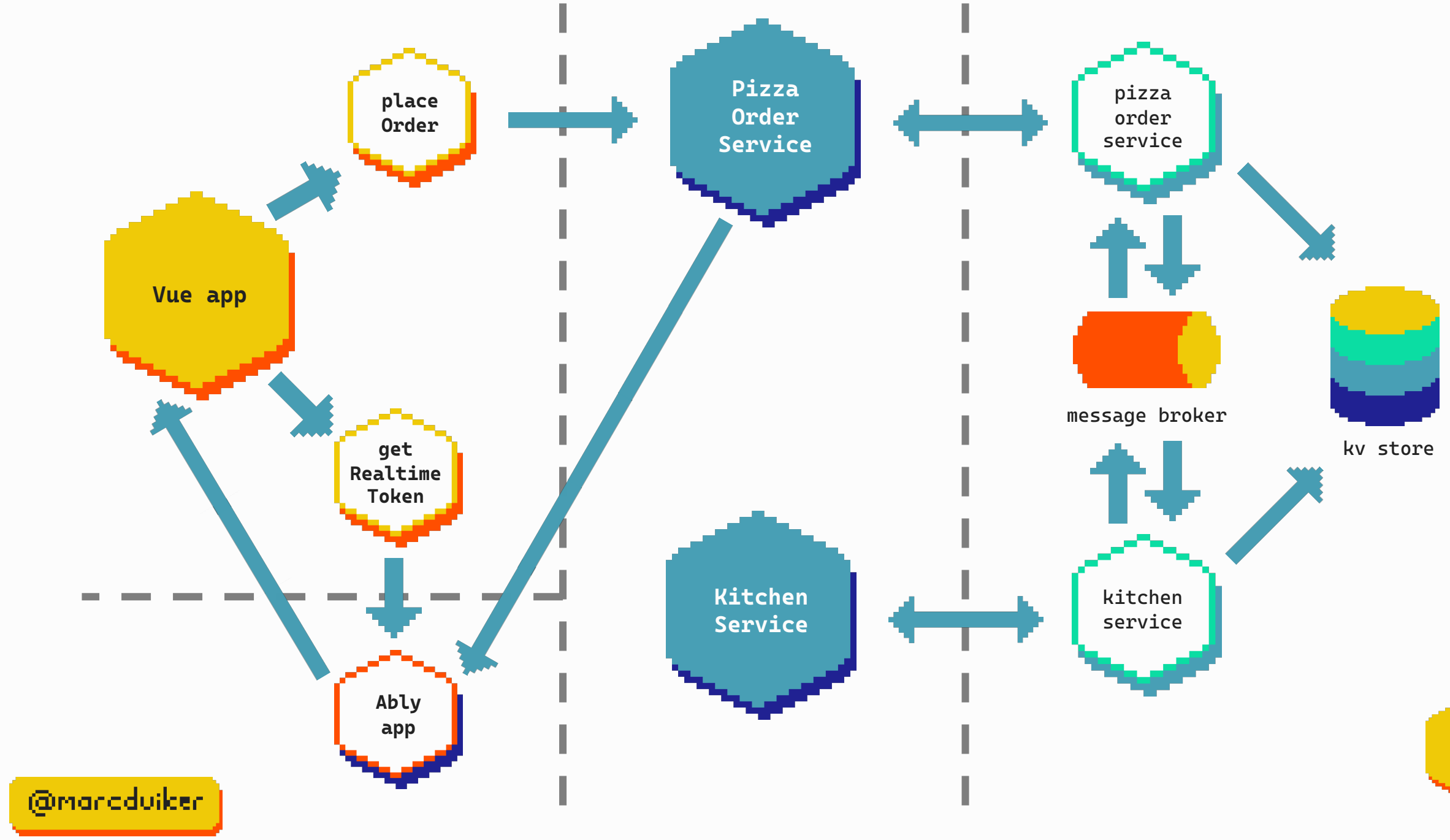
Catalyst Web UI

https://catalyst.diagrid.io/

github.com/diagridio/catalyst-samples

Pizza Workflow Demo

https://github.com/diagrid-labs/catalyst-pizza-demo



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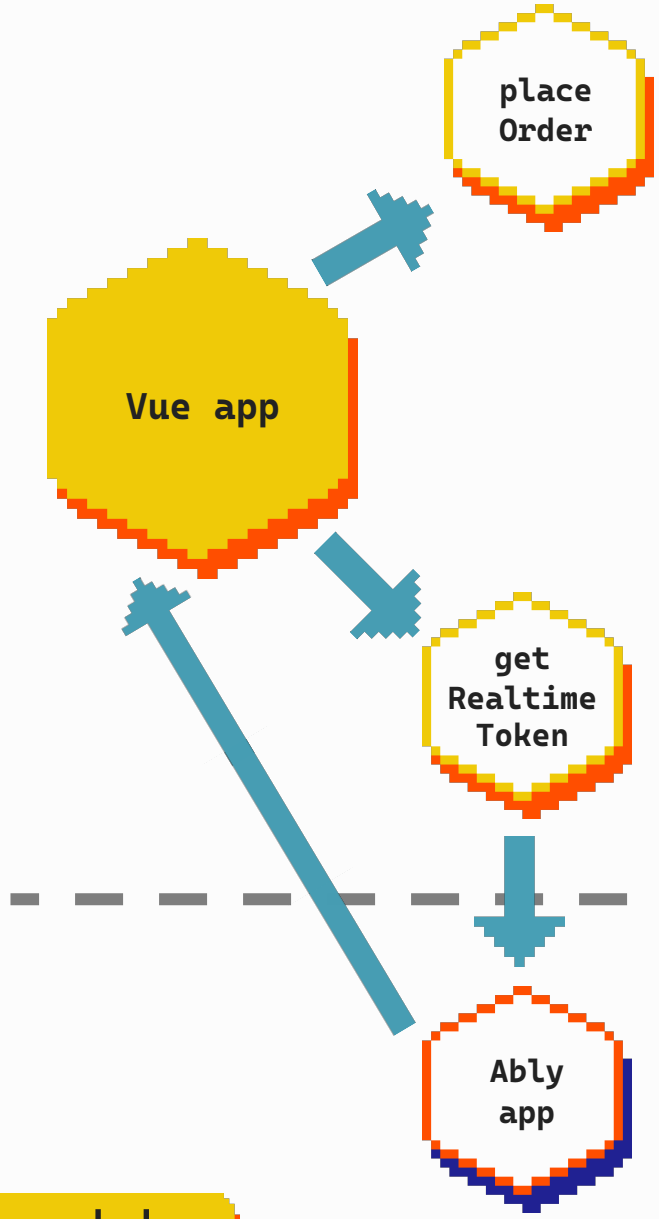

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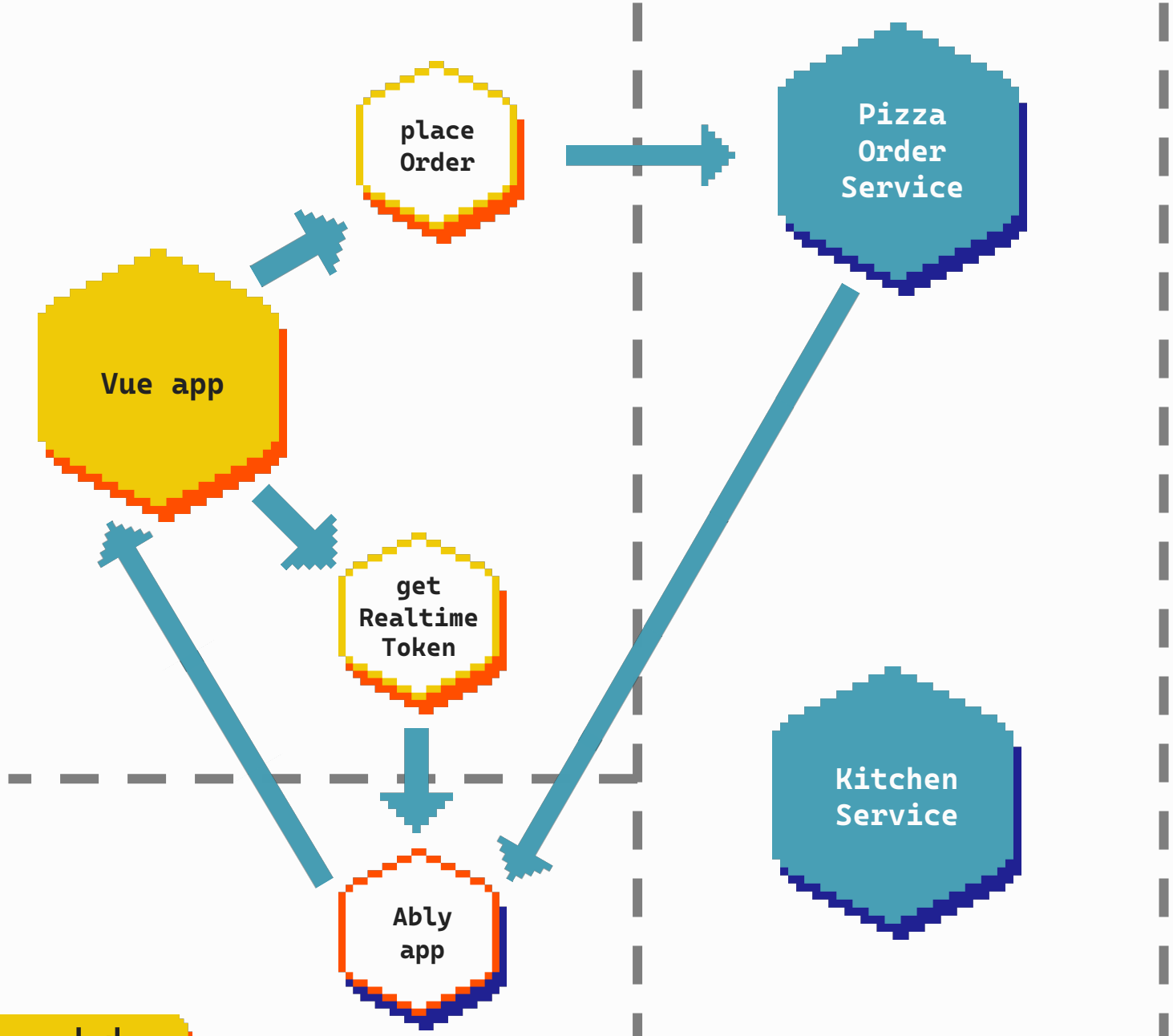

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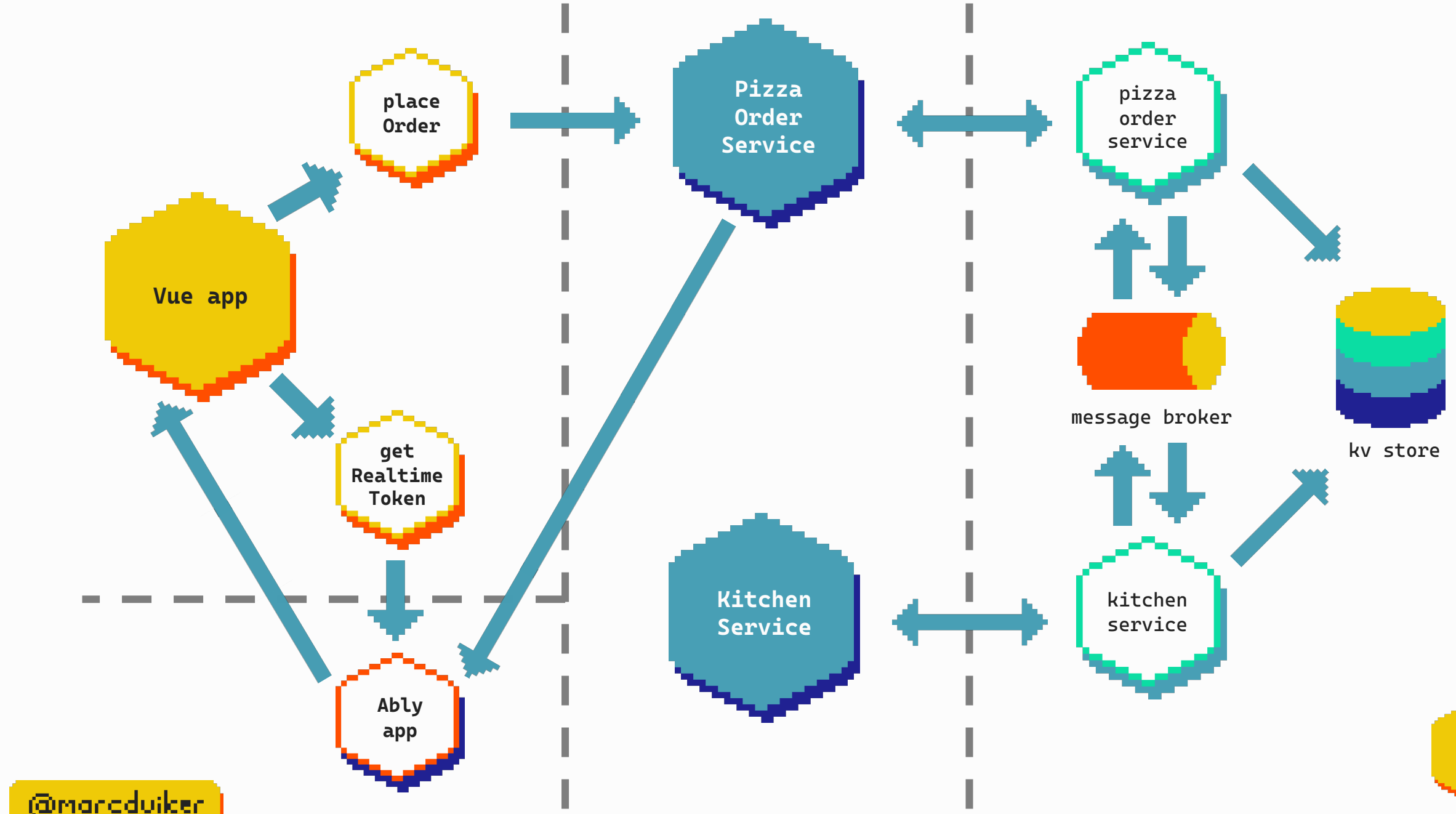
dapr



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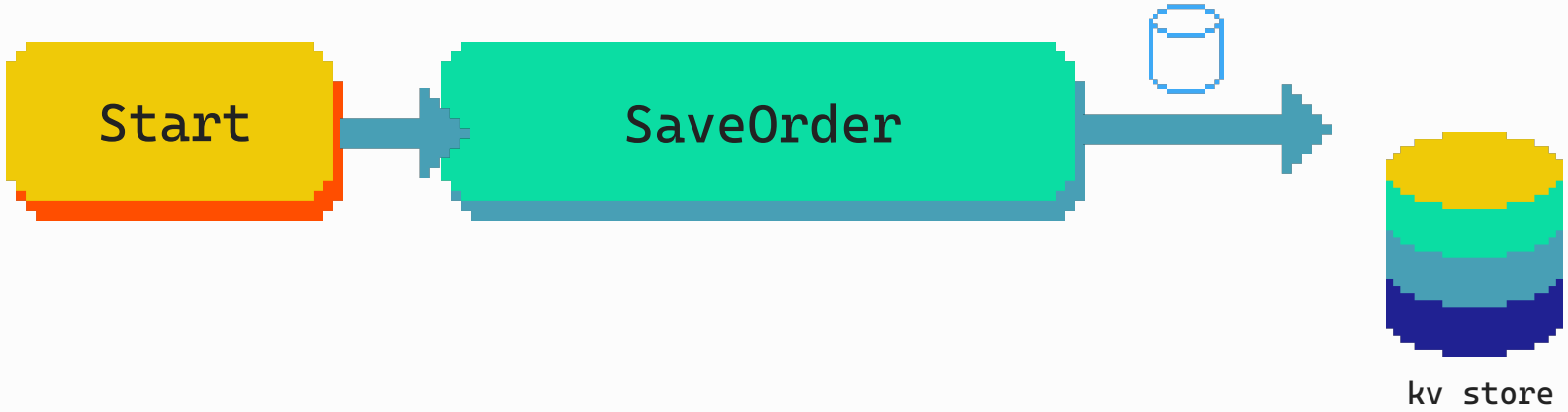
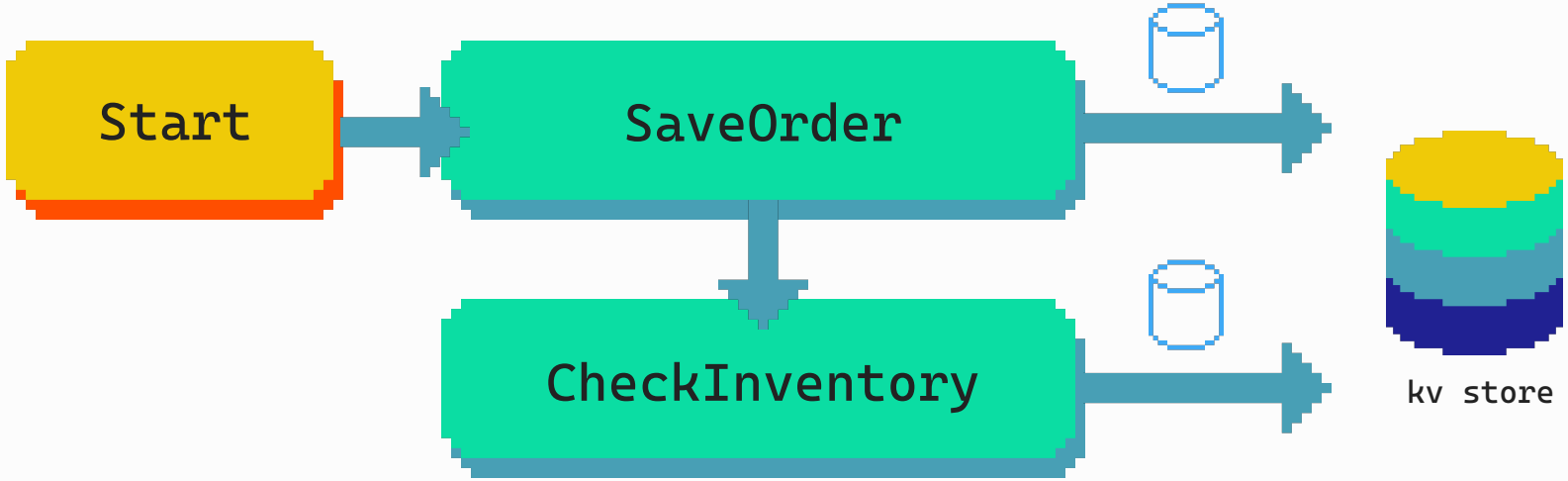
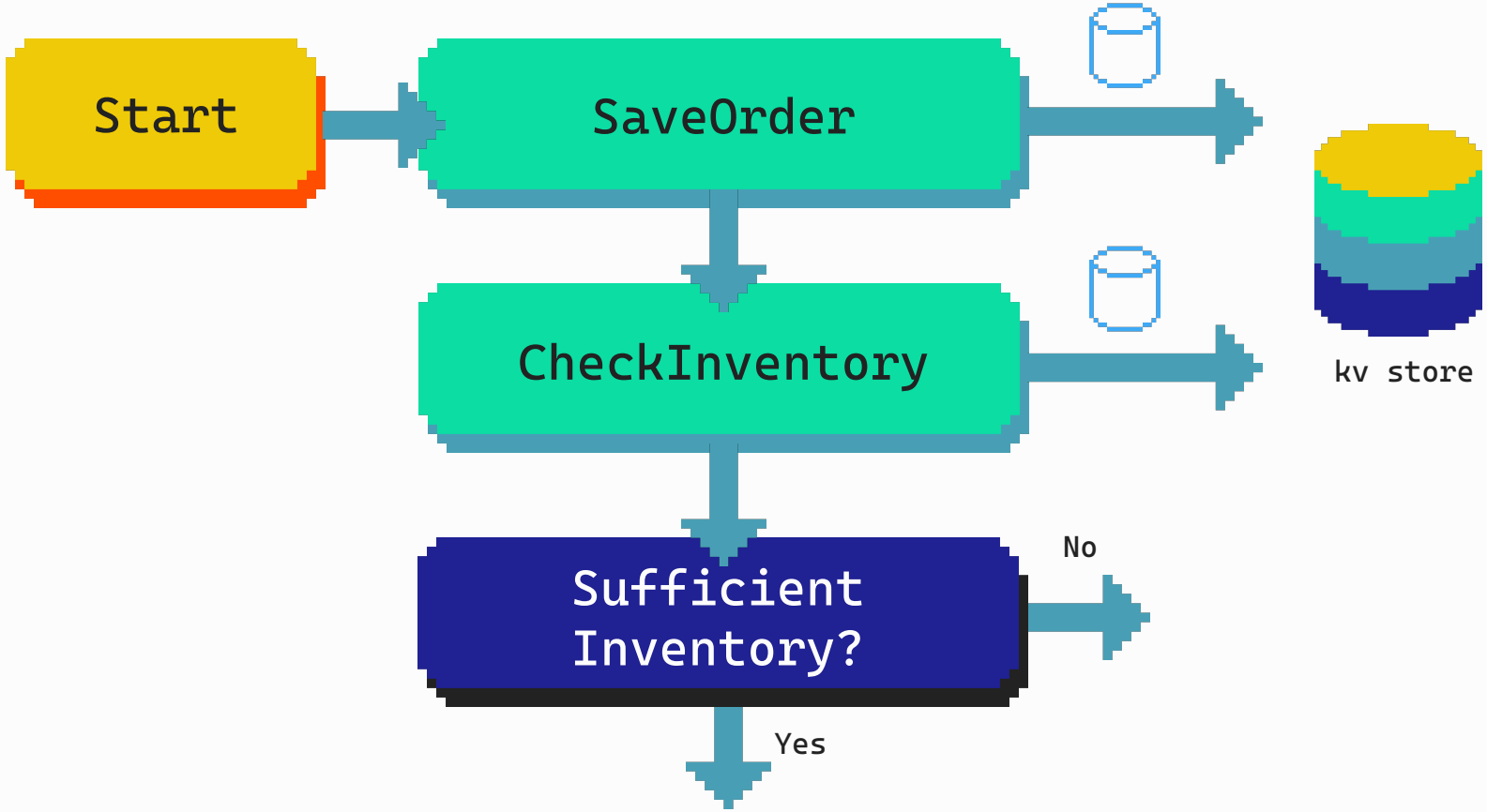
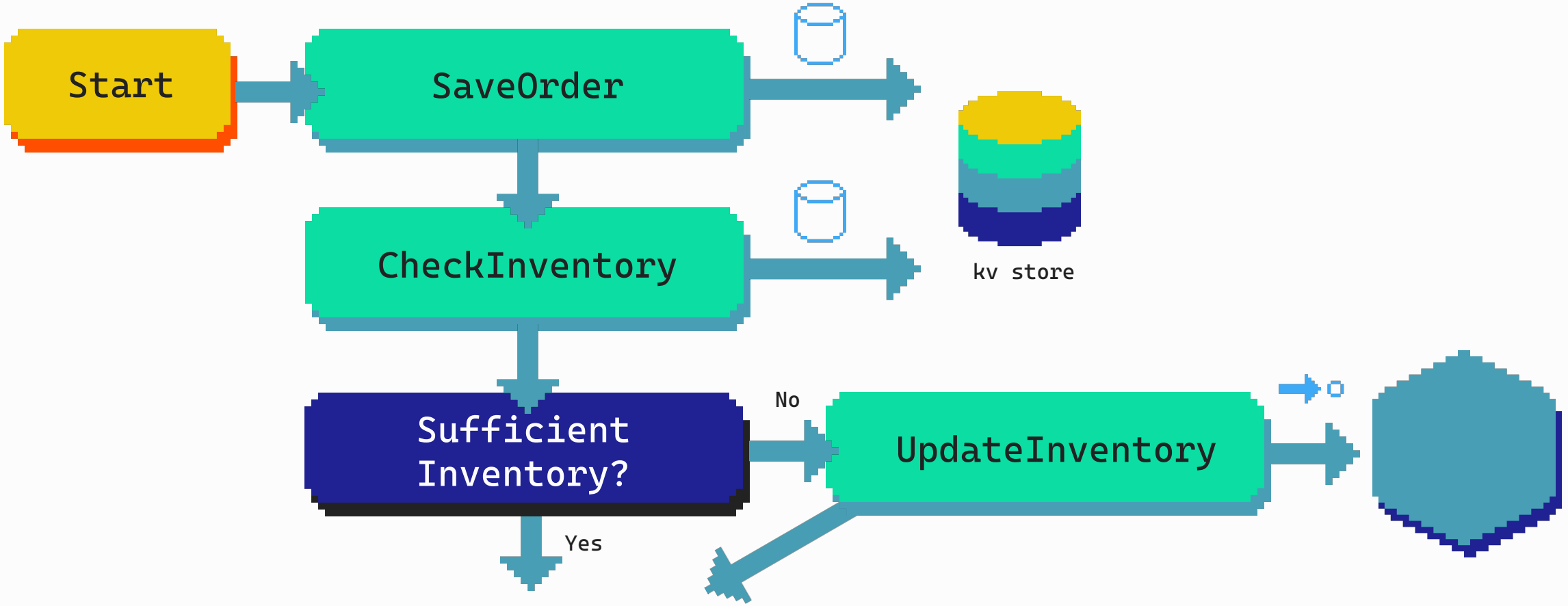
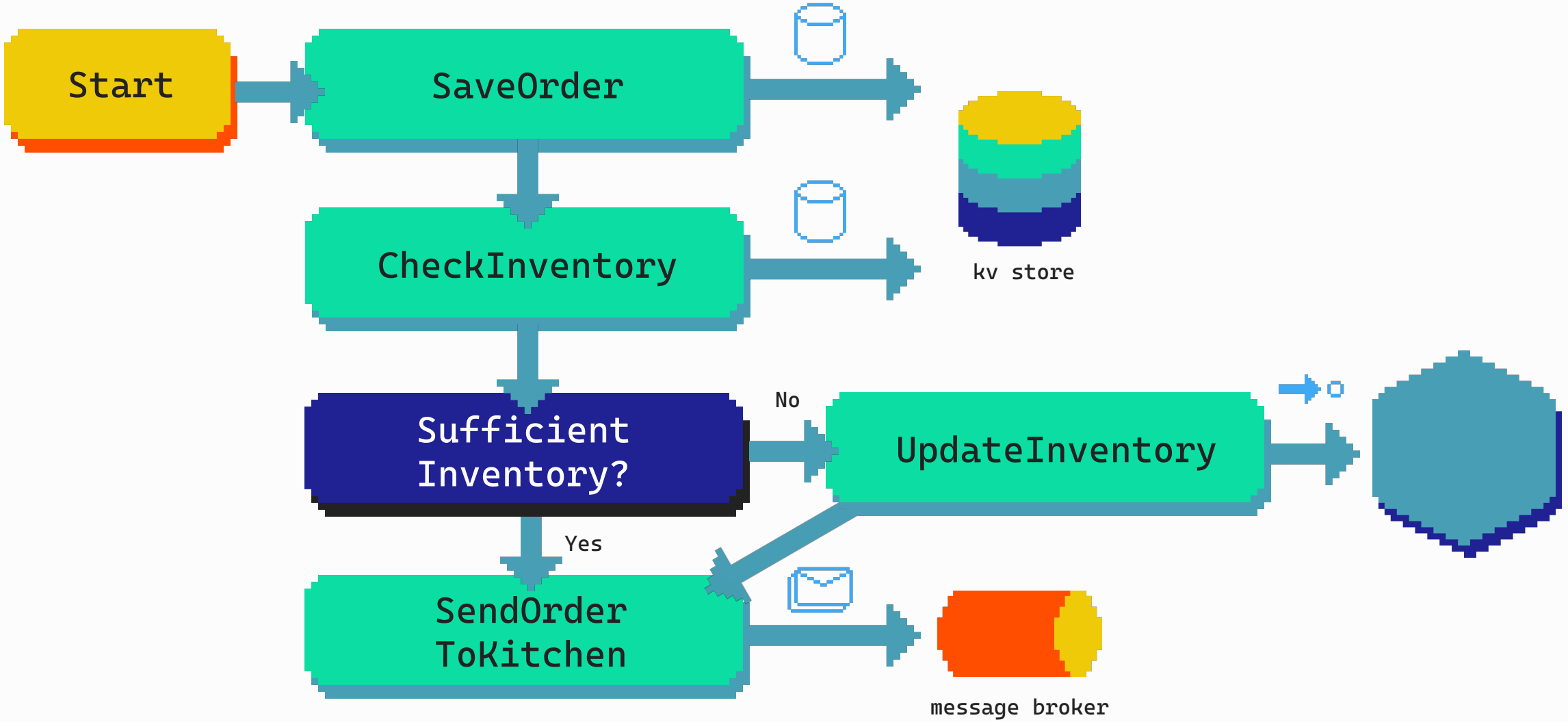
dapr

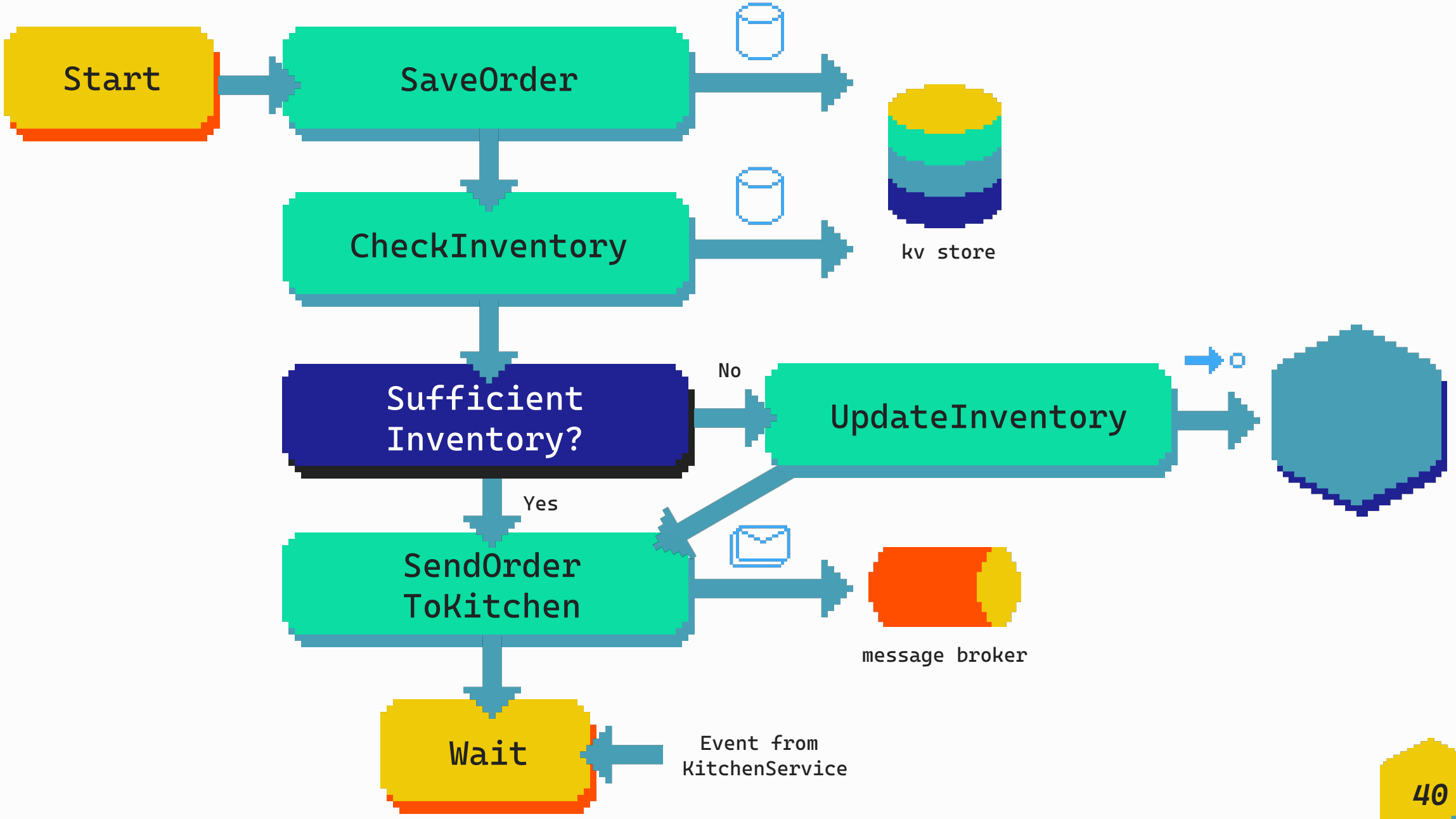

Start
SaveOrder
kv store

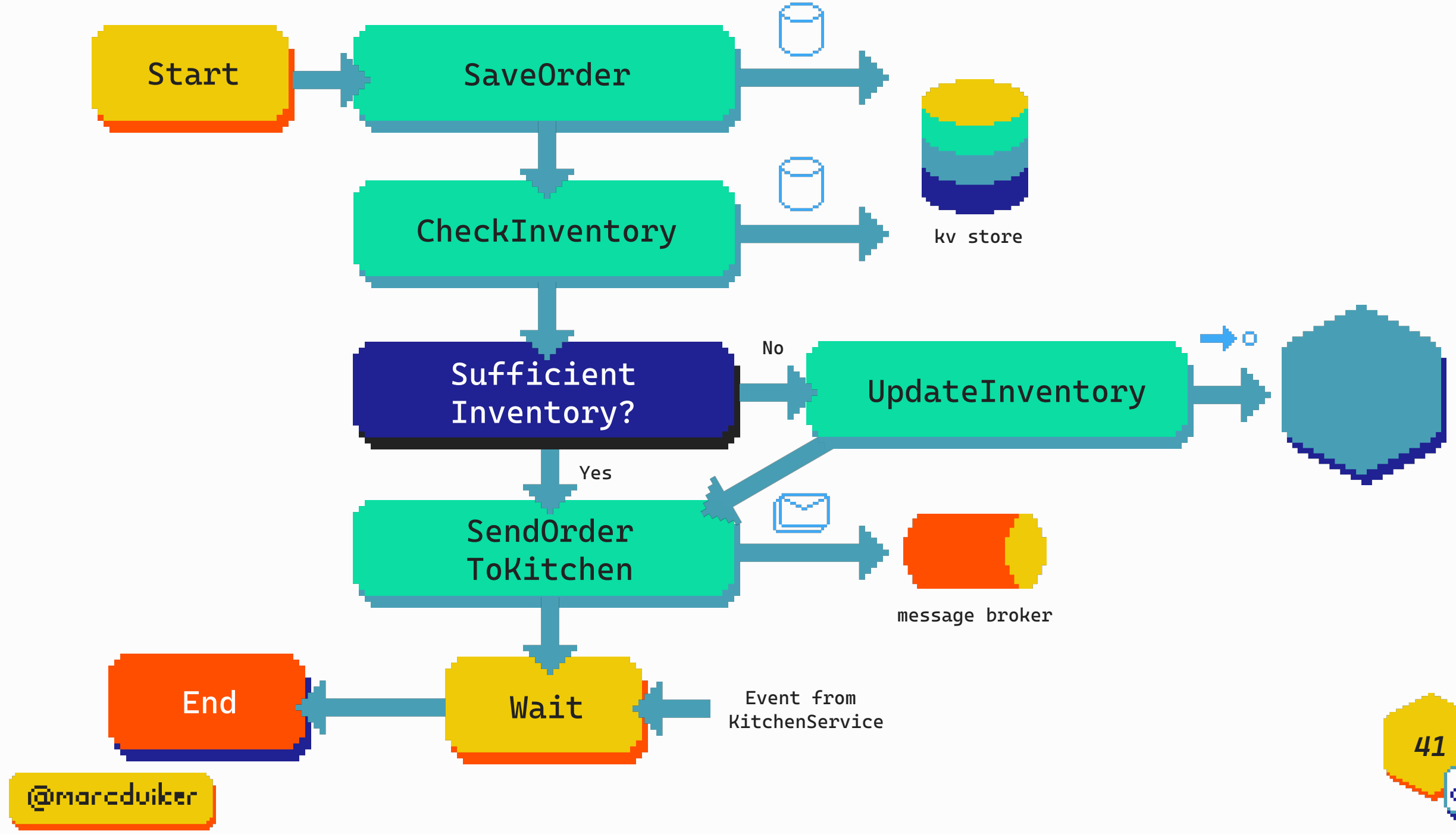

Start
SaveOrder
CheckInventory
kv store


Start
SaveOrder
CheckInventory
Sufficient Inventory?
No
Yes
kv store


Start
SaveOrder
CheckInventory
Sufficient Inventory?
No
Yes
UpdateInventory
kv store


Start
SaveOrder
CheckInventory
kv store
Sufficient Inventory?
No
UpdateInventory
Yes
SendOrder ToKitchen
message broker


Start
SaveOrder
CheckInventory
kv store
Sufficient Inventory?
No
UpdateInventory
Yes
SendOrder ToKitchen
message broker
Wait
Event from KitchenService


Start
SaveOrder
CheckInventory
kv store
Sufficient Inventory?
No
UpdateInventory
Yes
SendOrder ToKitchen
message broker
End
Wait
Event from KitchenService
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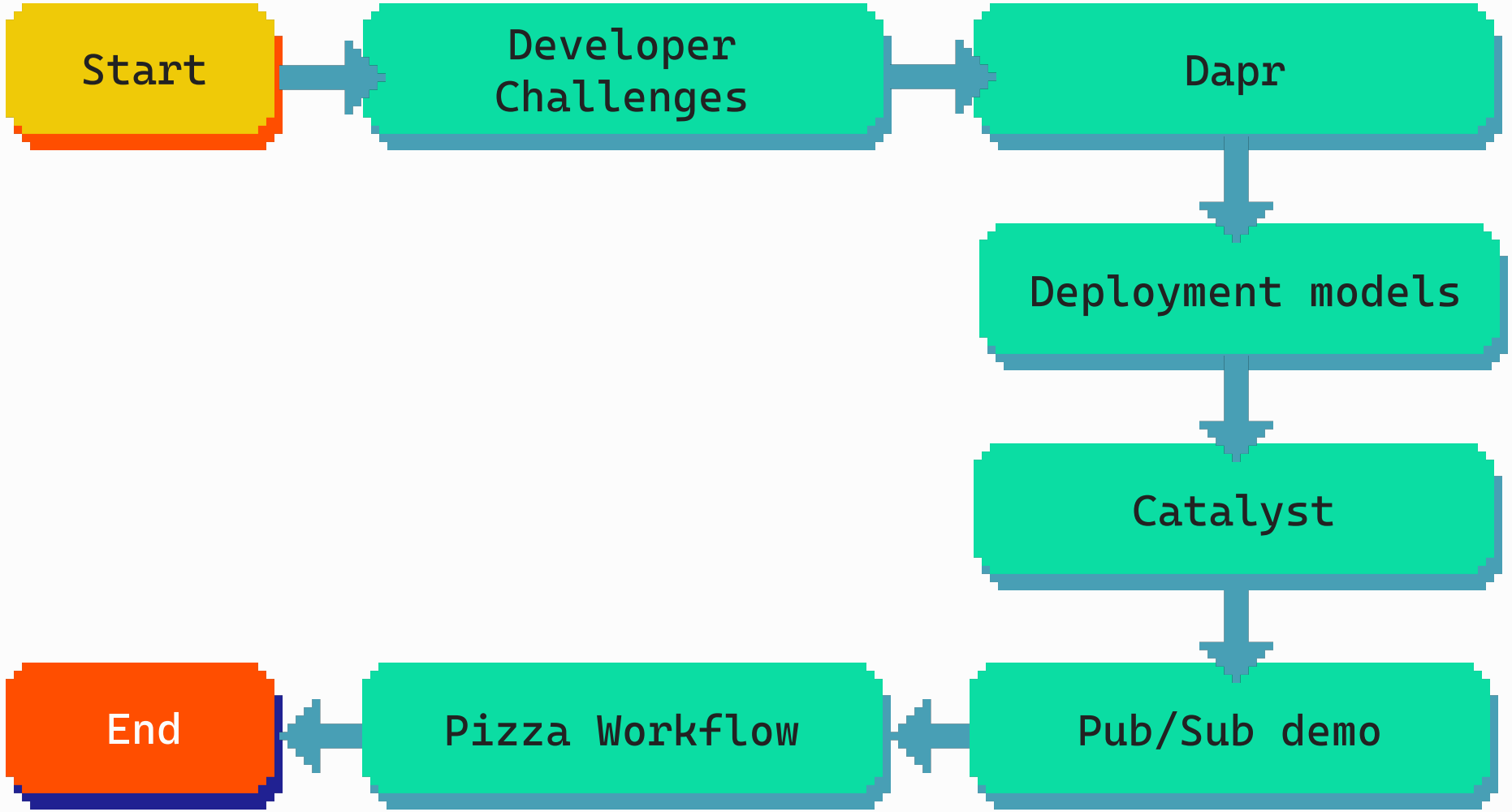
41
dapr

github.com/diagrid-labs/catalyst-pizza-demo

Catalyst Web UI

https://catalyst.diagrid.io/


Start
Developer Challenges
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Deployment models
Catalyst
Pub/Sub demo
Pizza Workflow
End

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