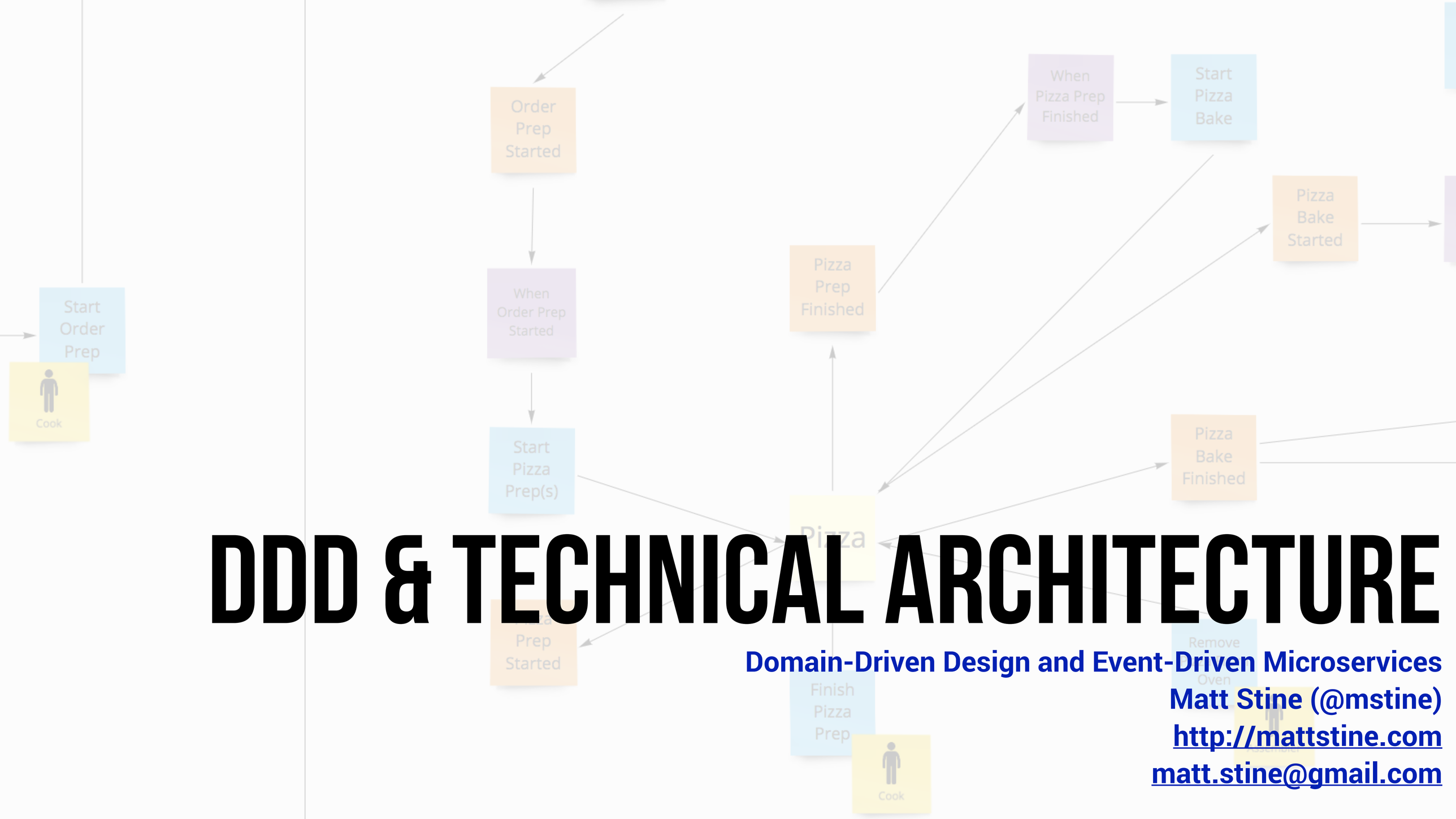

DDD & TECHNICAL ARCHITECTURE

Domain-Driven Design and Event-Driven Microservices

Matt Stine (@mstine)
http://mattstine.com
matt.stine@gmail.com

AGENDA

- The Golden Rule
- Hexagonal Architecture
- Request/Response vs. Fire and Forget
- Queues/Load Balancing vs. Publish-Subscribe
- Introducing Persistence
- Event Sourcing / CQRS
- From Modules to Microservices

THE GOLDEN RULE

Aggregate ≤ SizeOf(Module) ≤ Bounded Context

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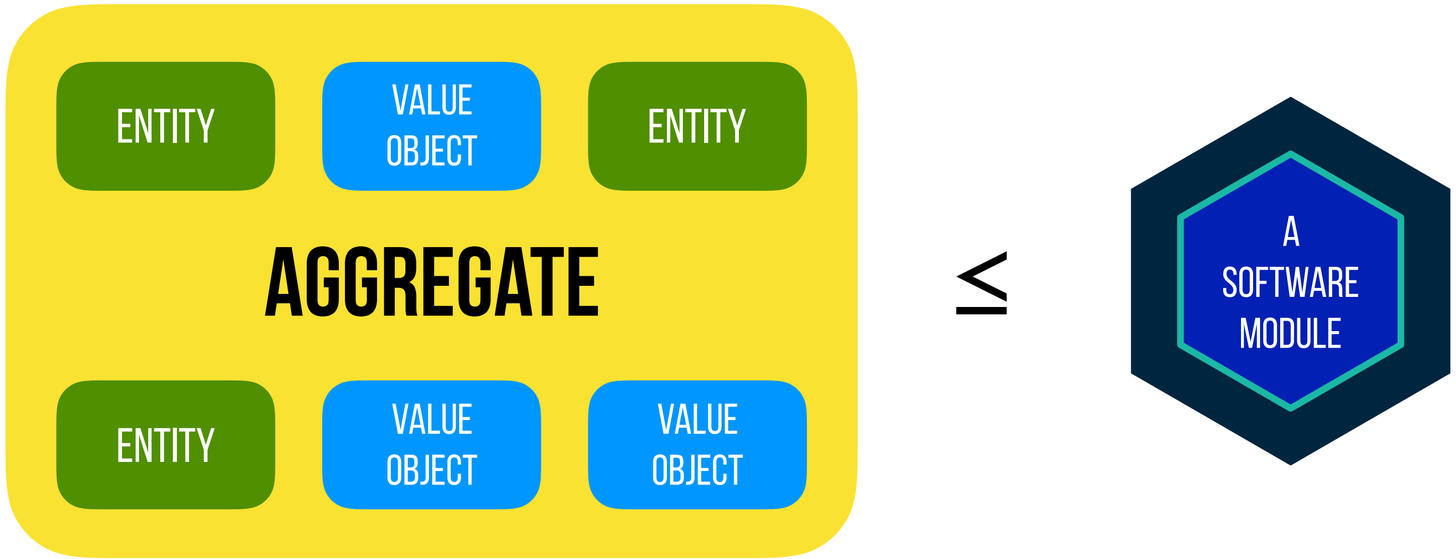

≤

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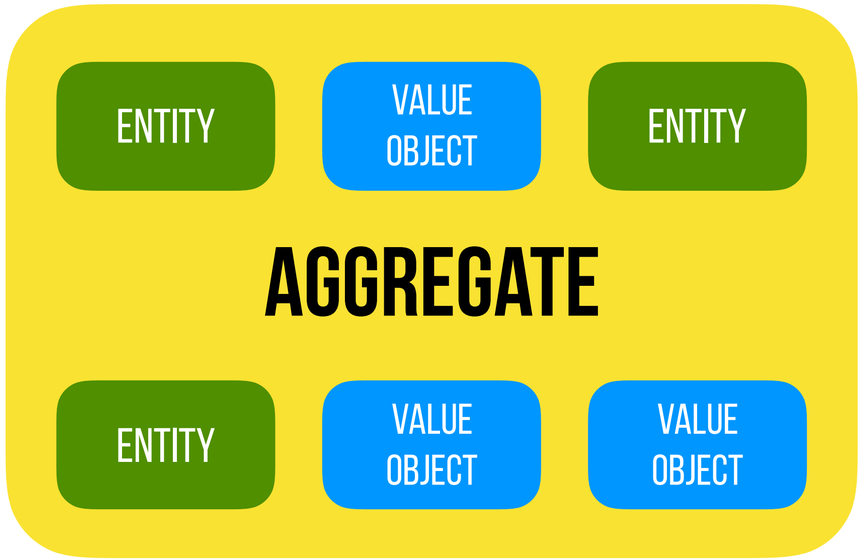

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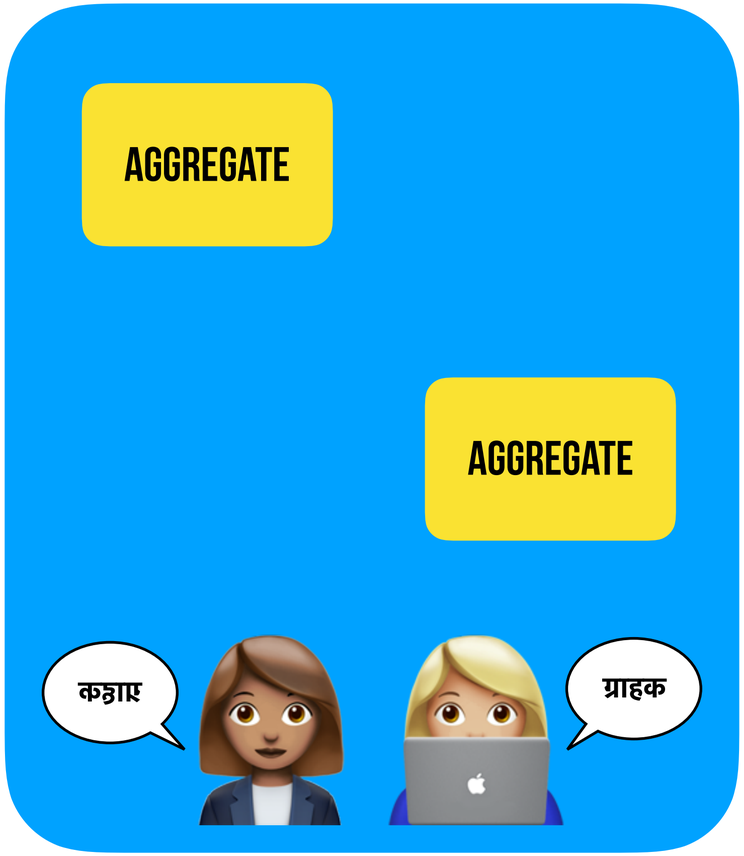

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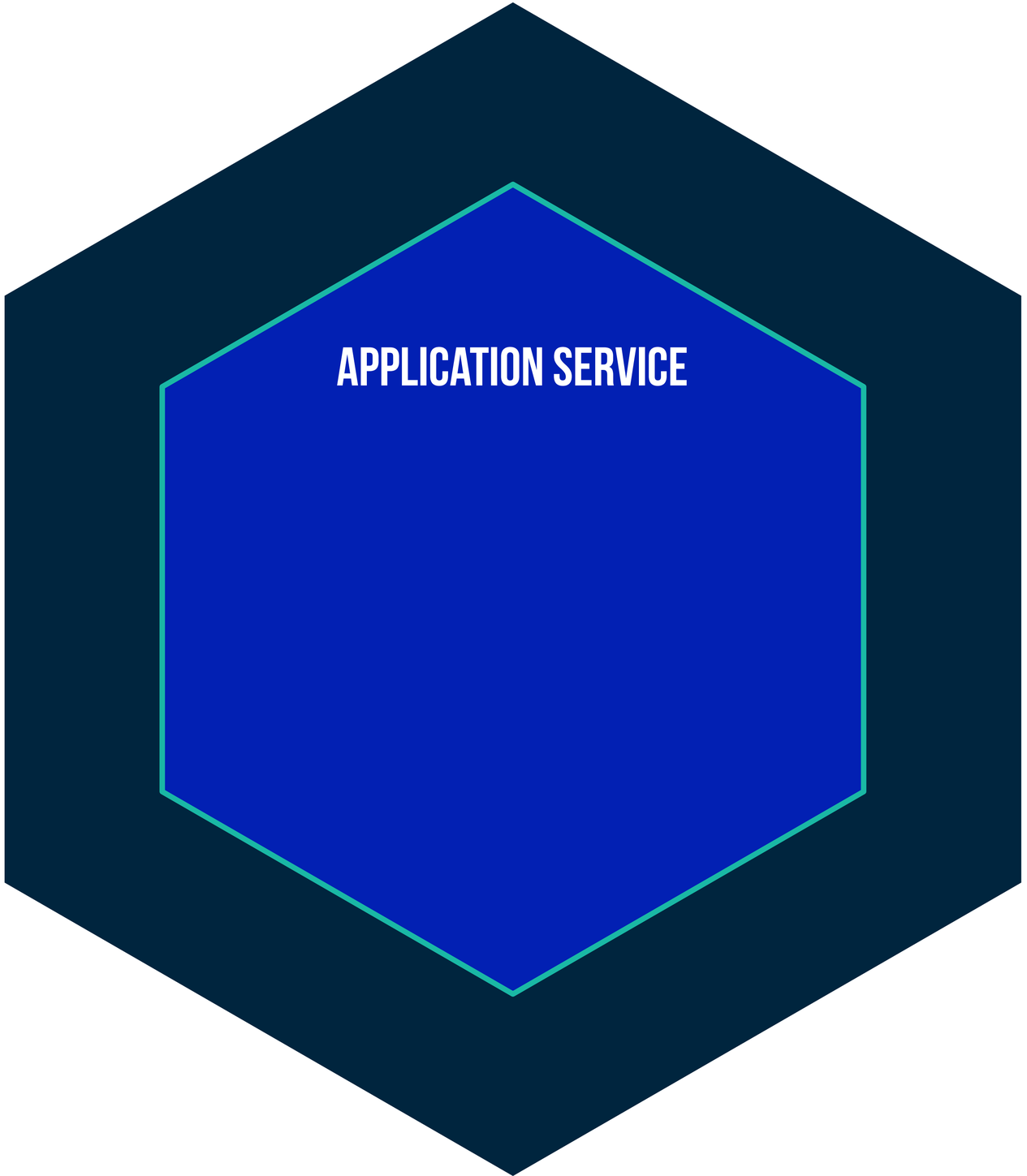
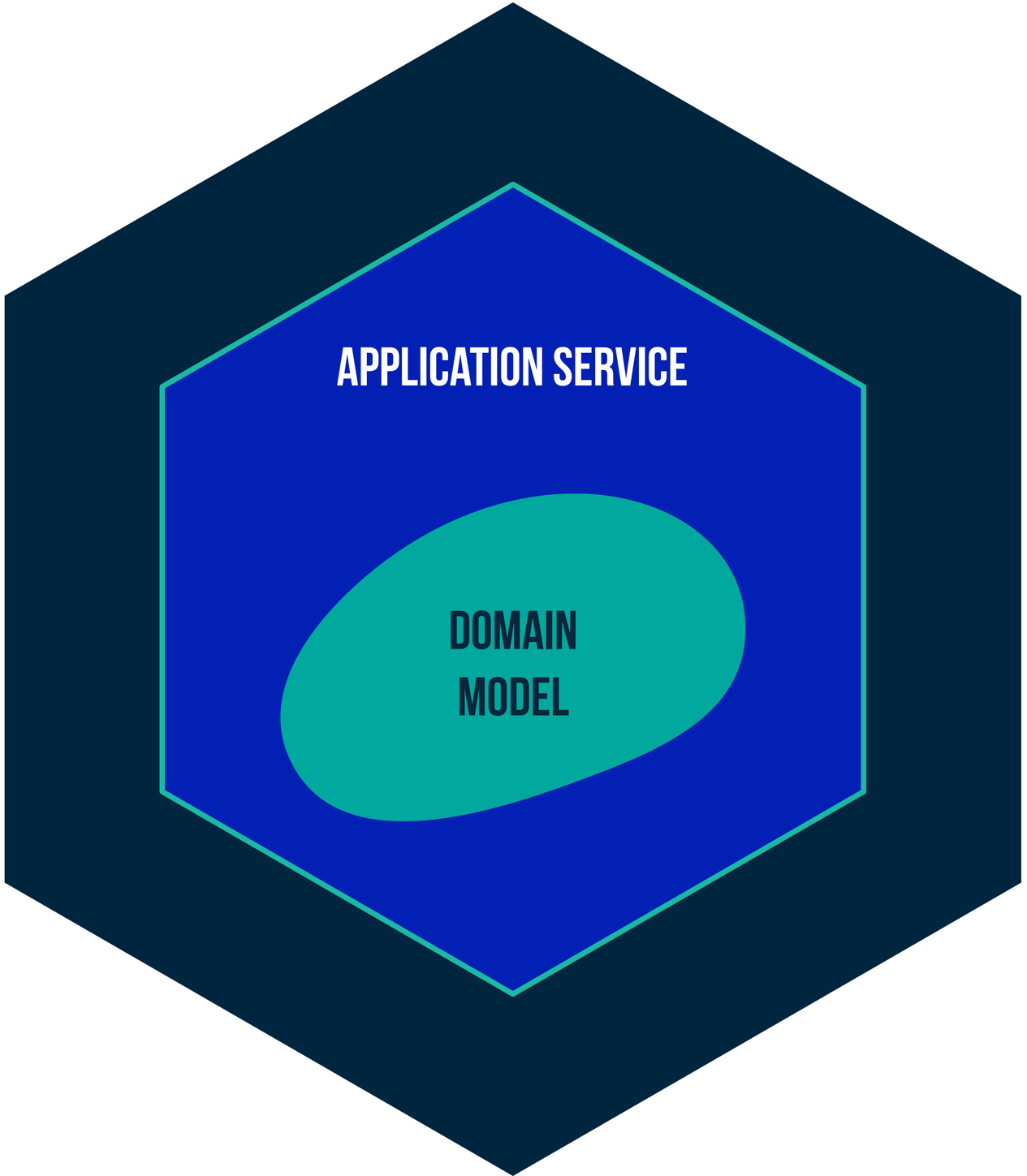
HEXAGONAL ARCHITECTURE



HEXAGONAL ARCHITECTURE

- Domain Model (Aggregates, etc.) wrapped by an Application Service



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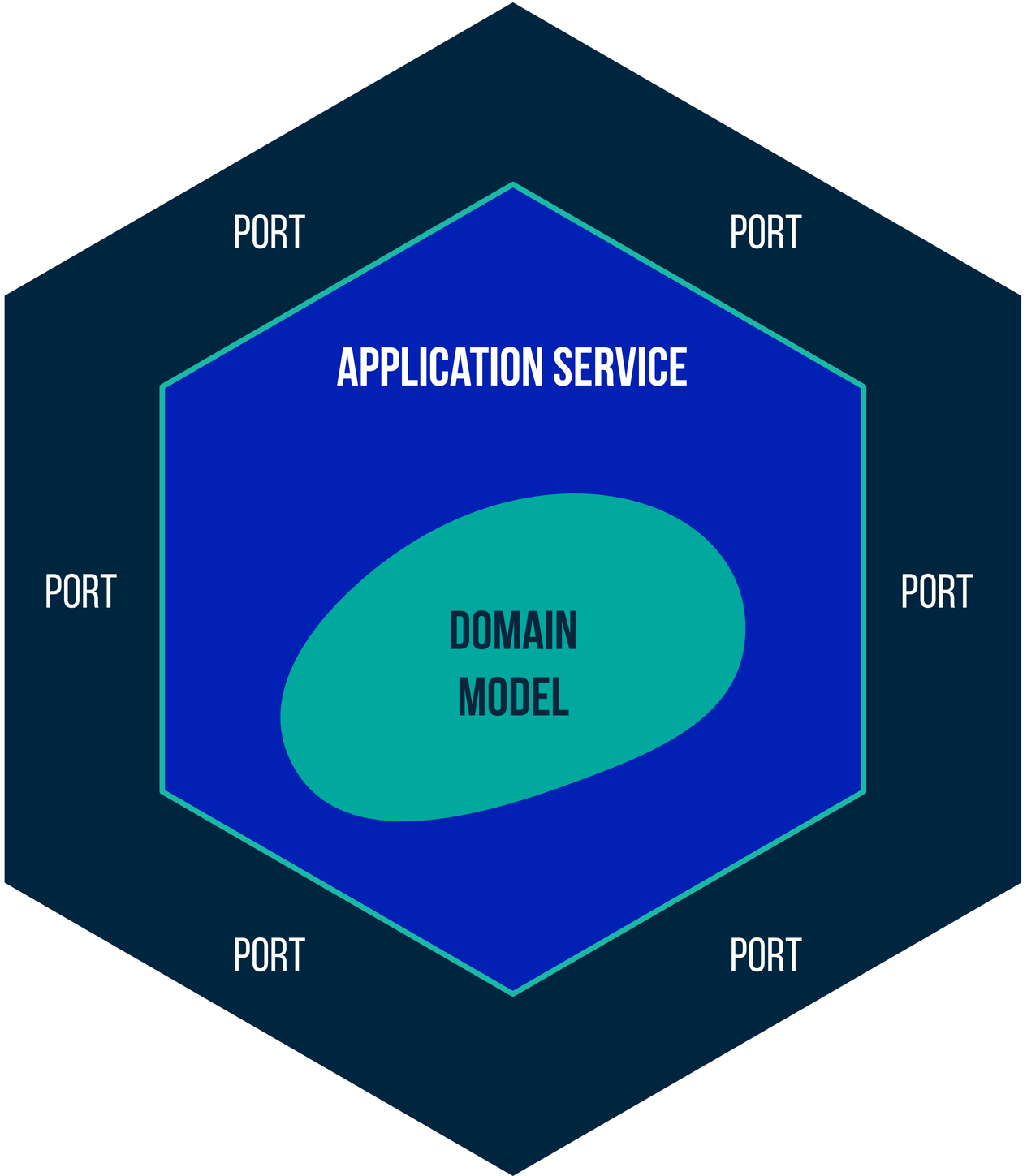

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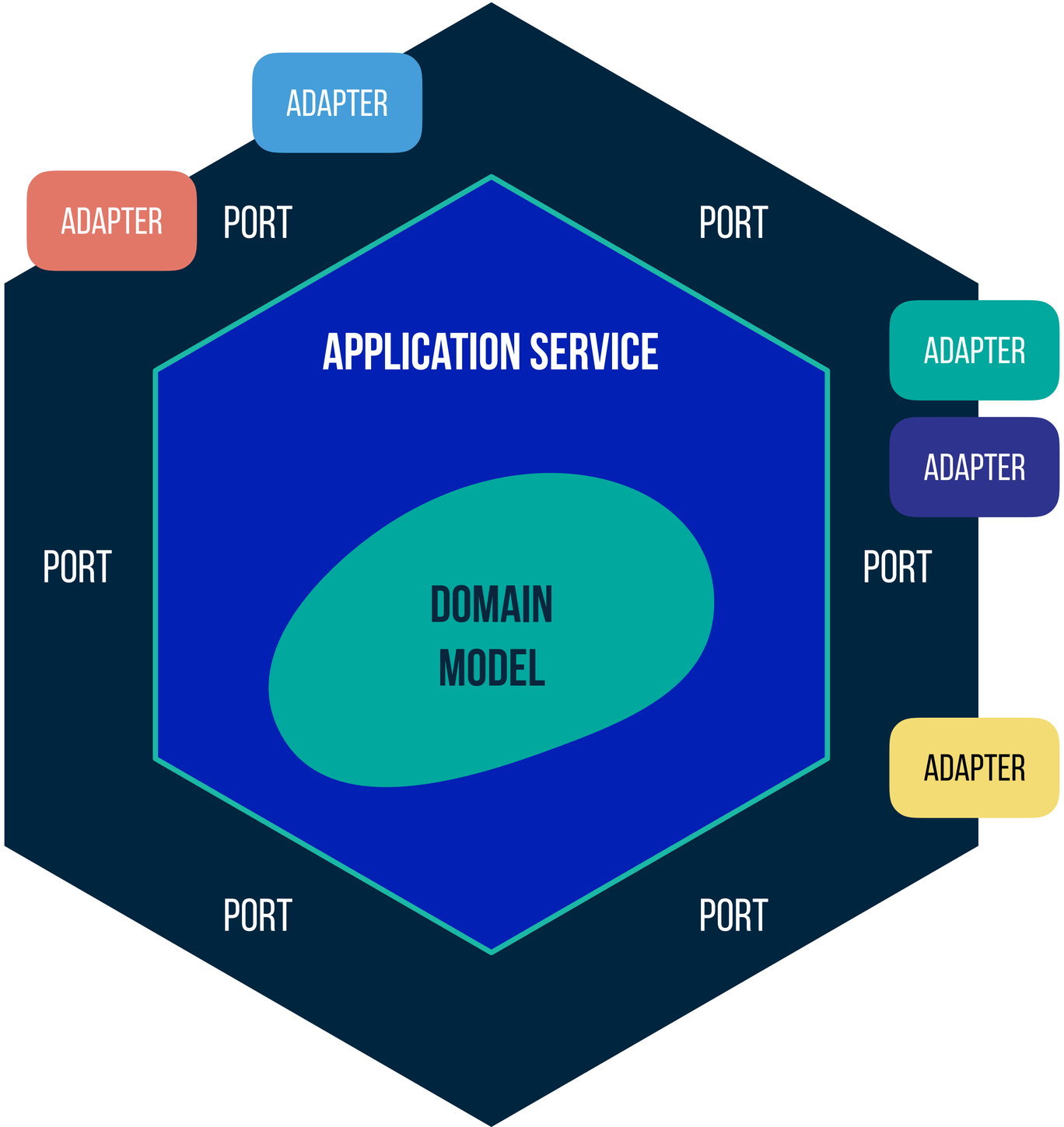

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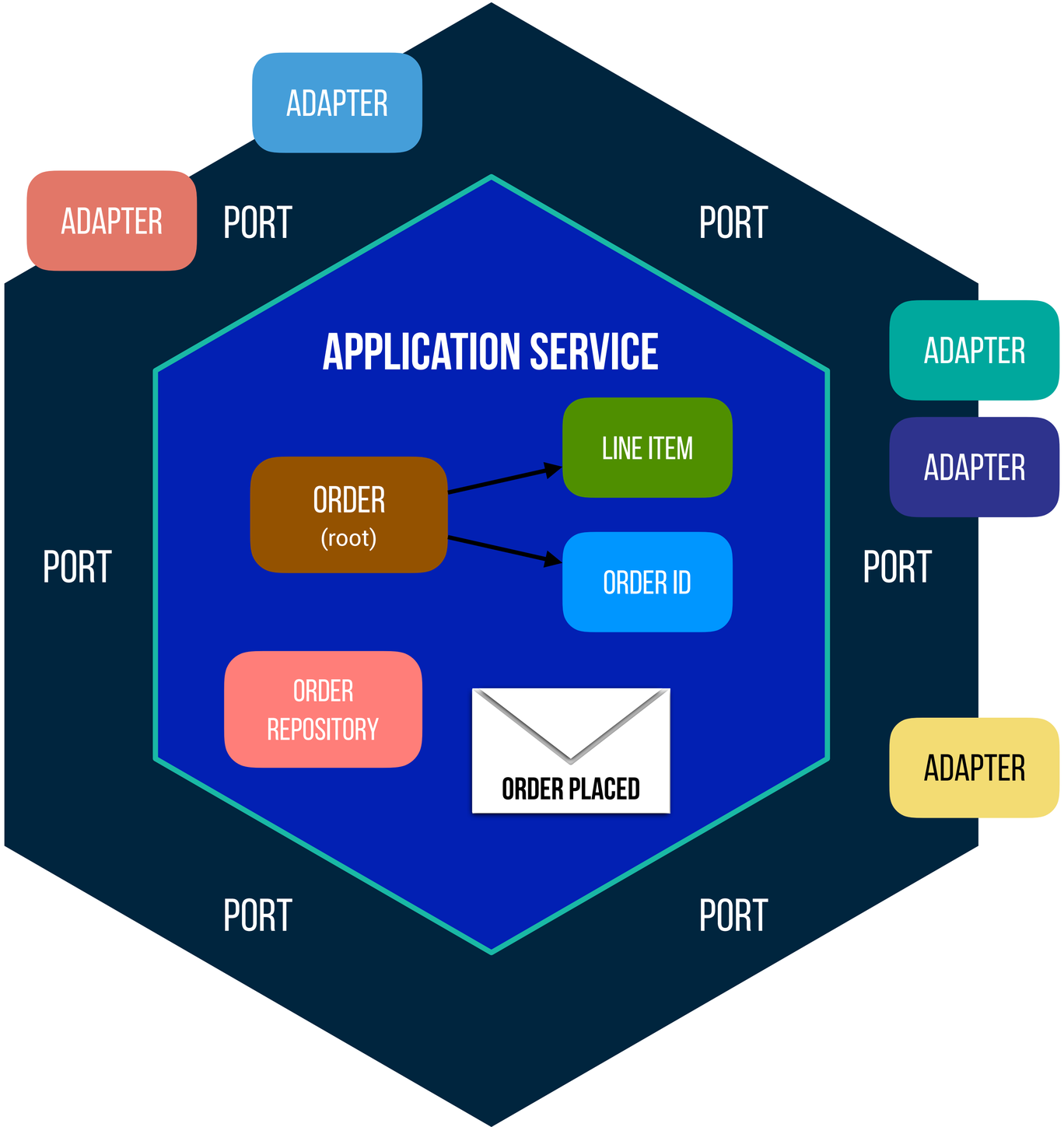

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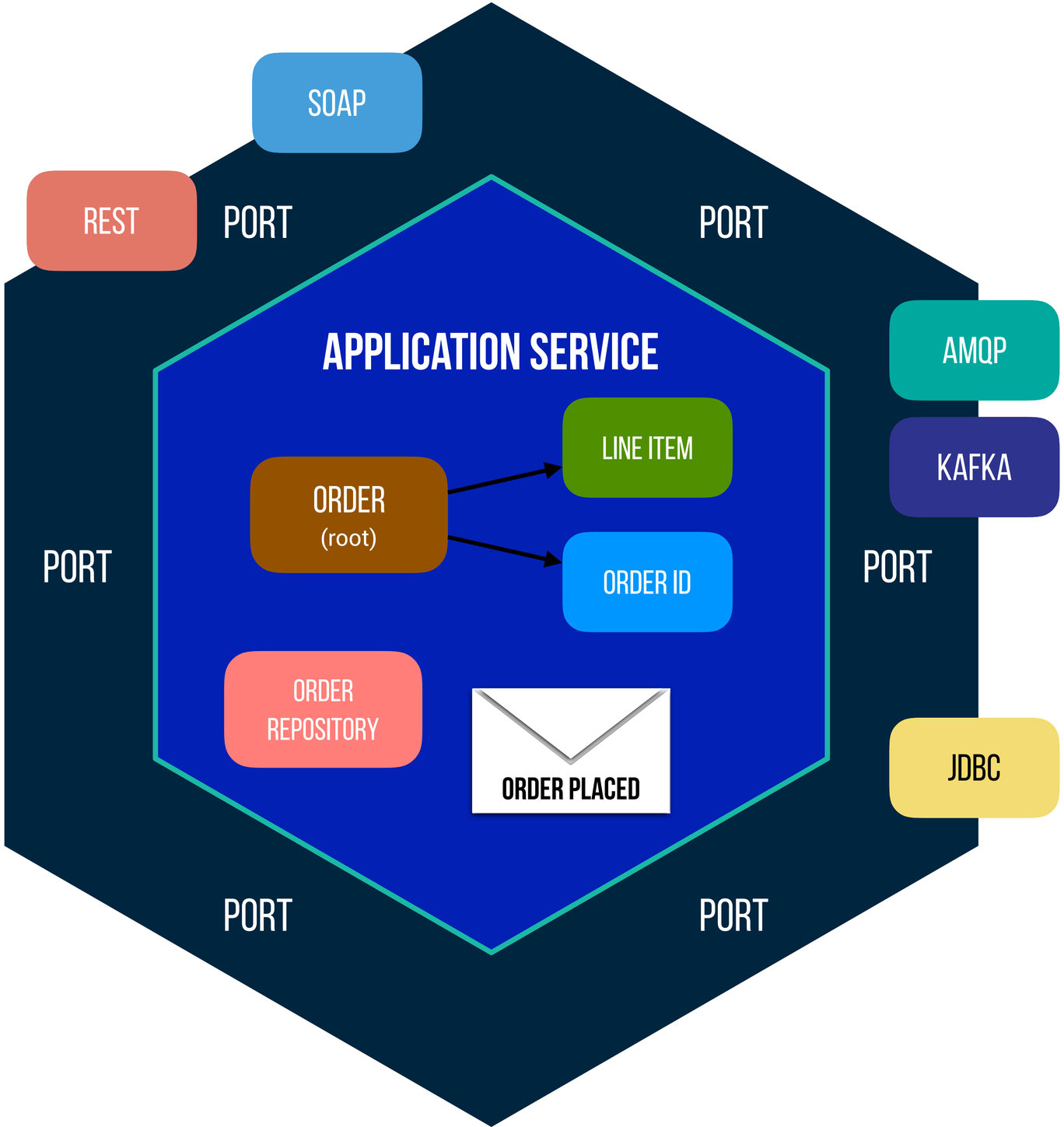
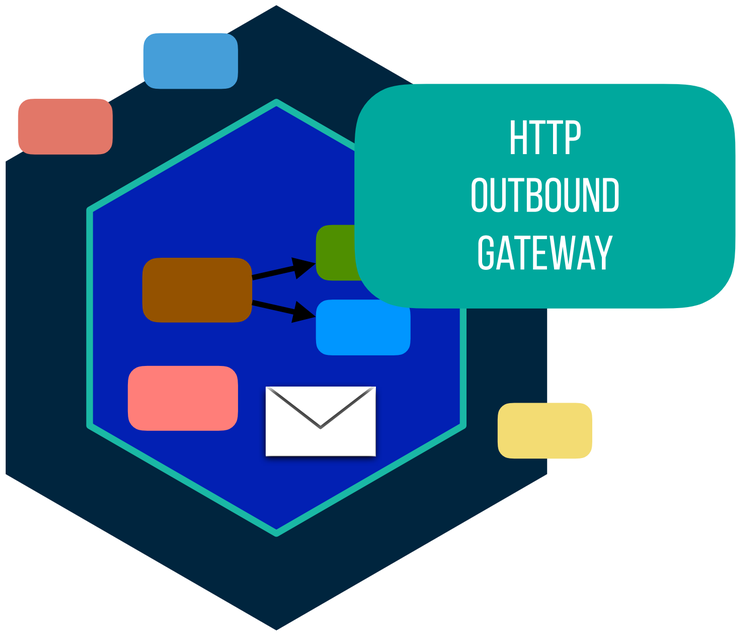


REQUEST / RESPONSE

REQUEST / RESPONSE



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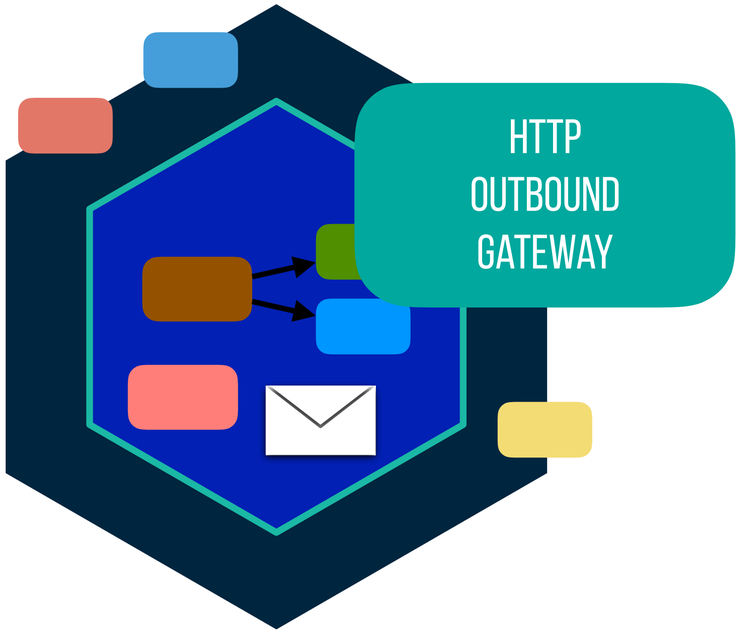

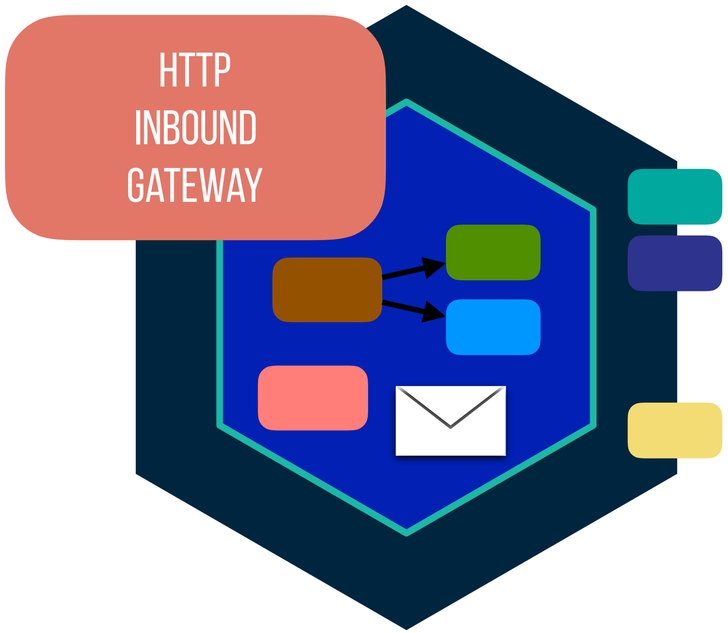

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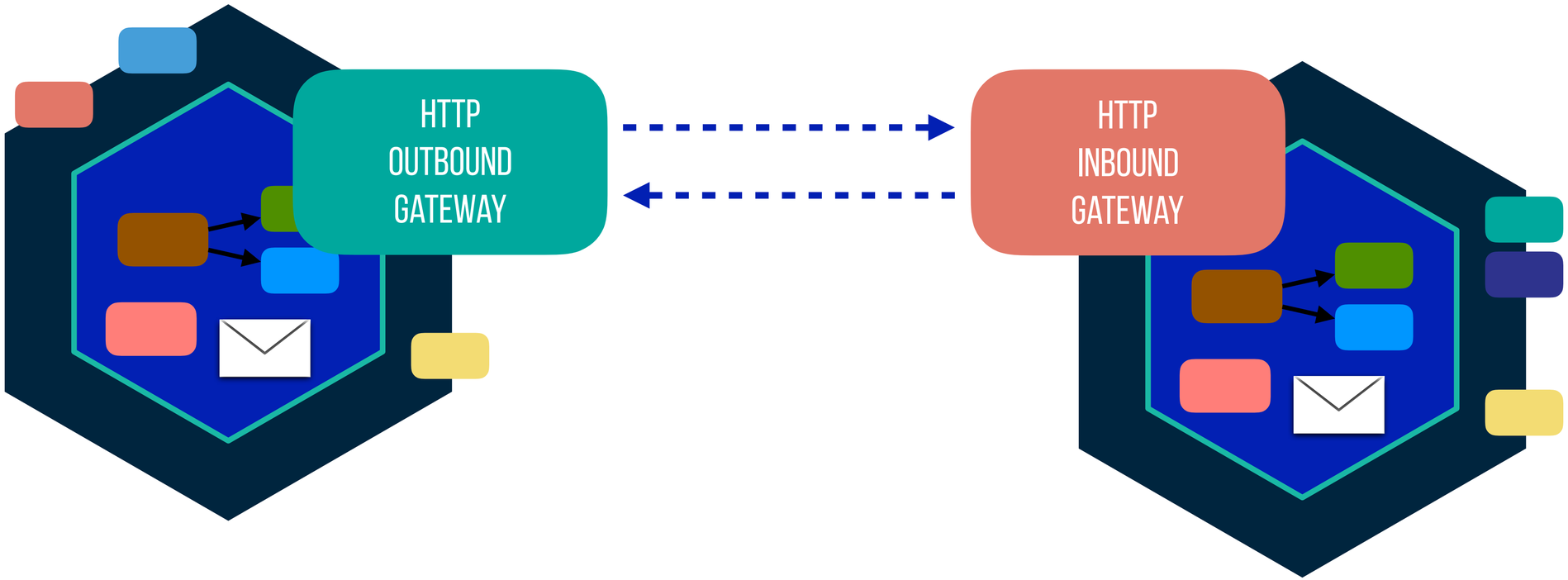
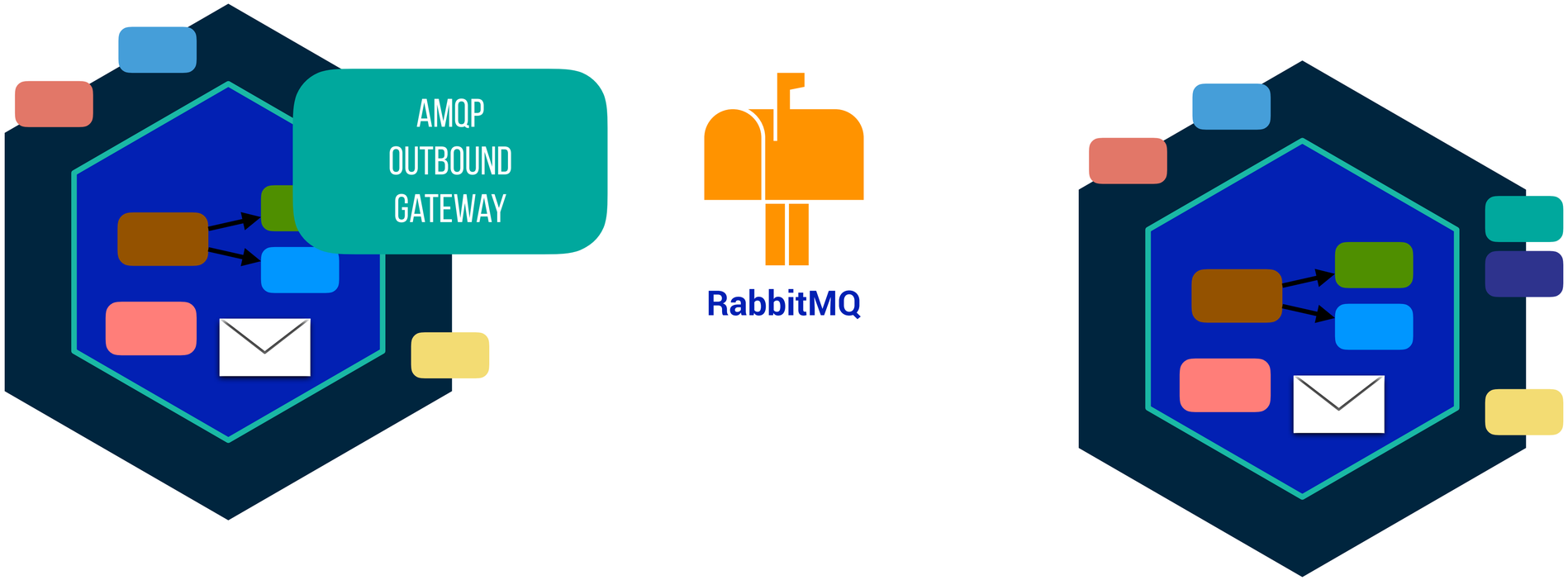


FIRE AND FORGET

RabbitMQ

FIRE AND FORGET



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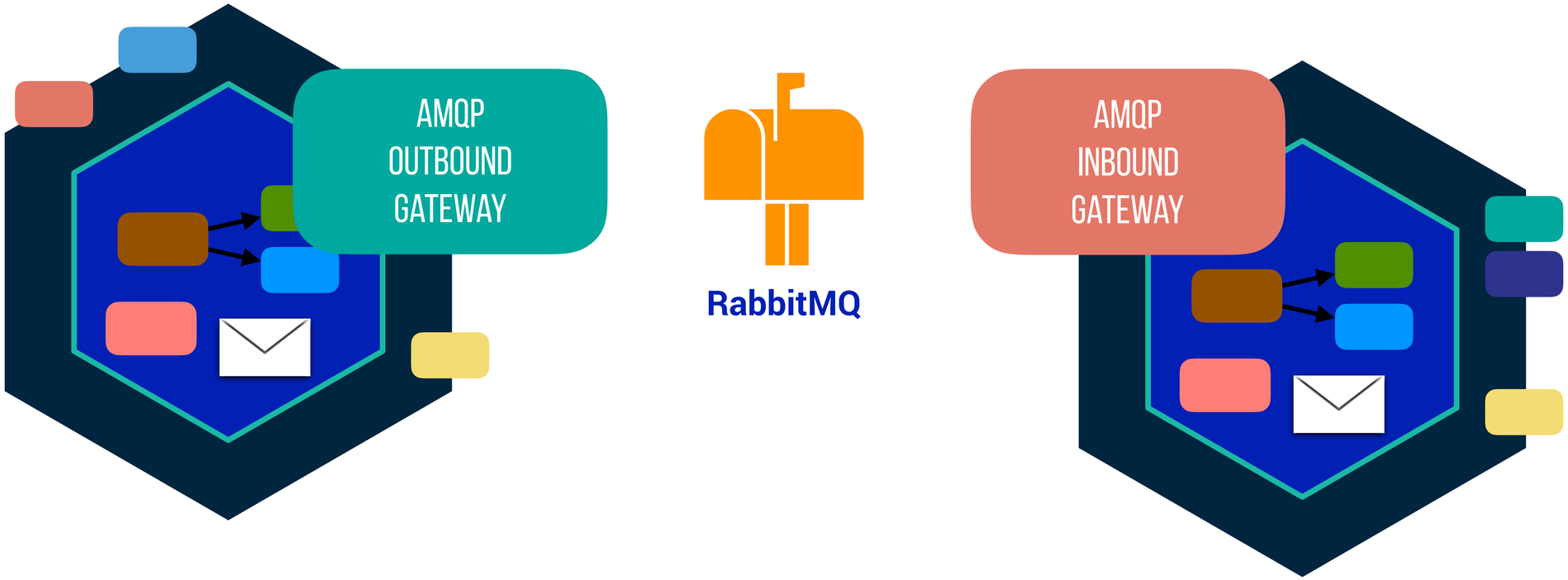

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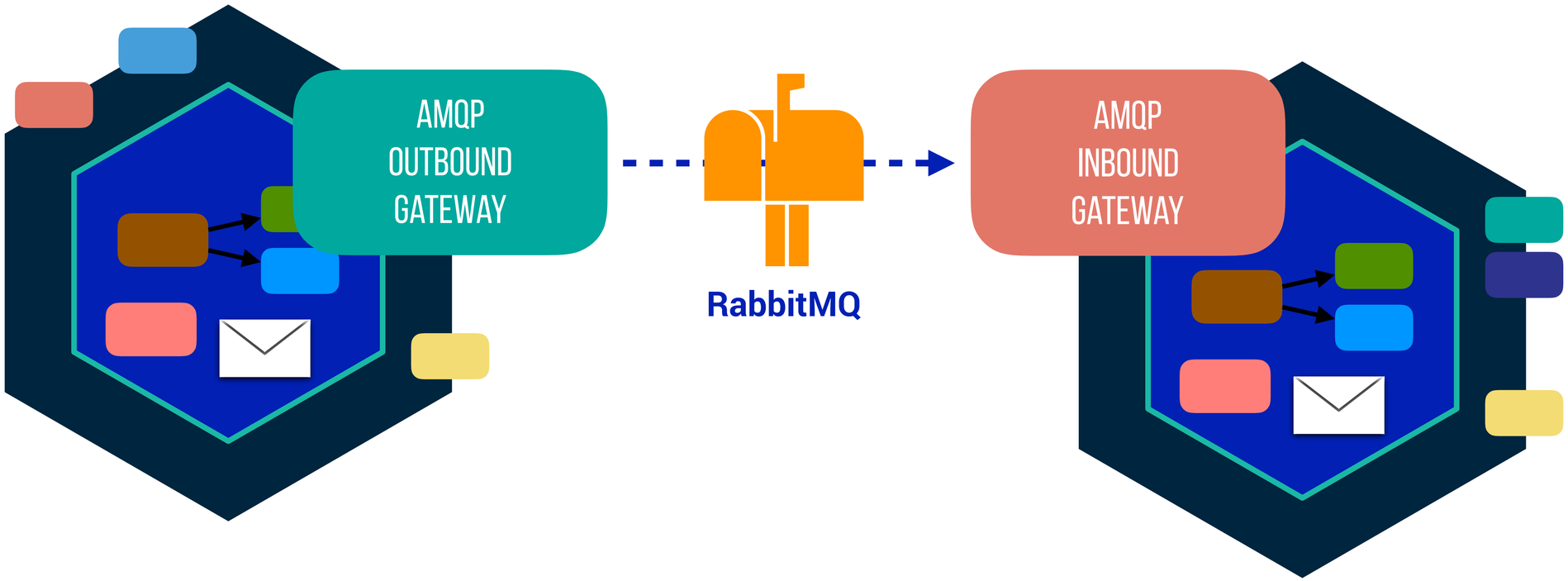

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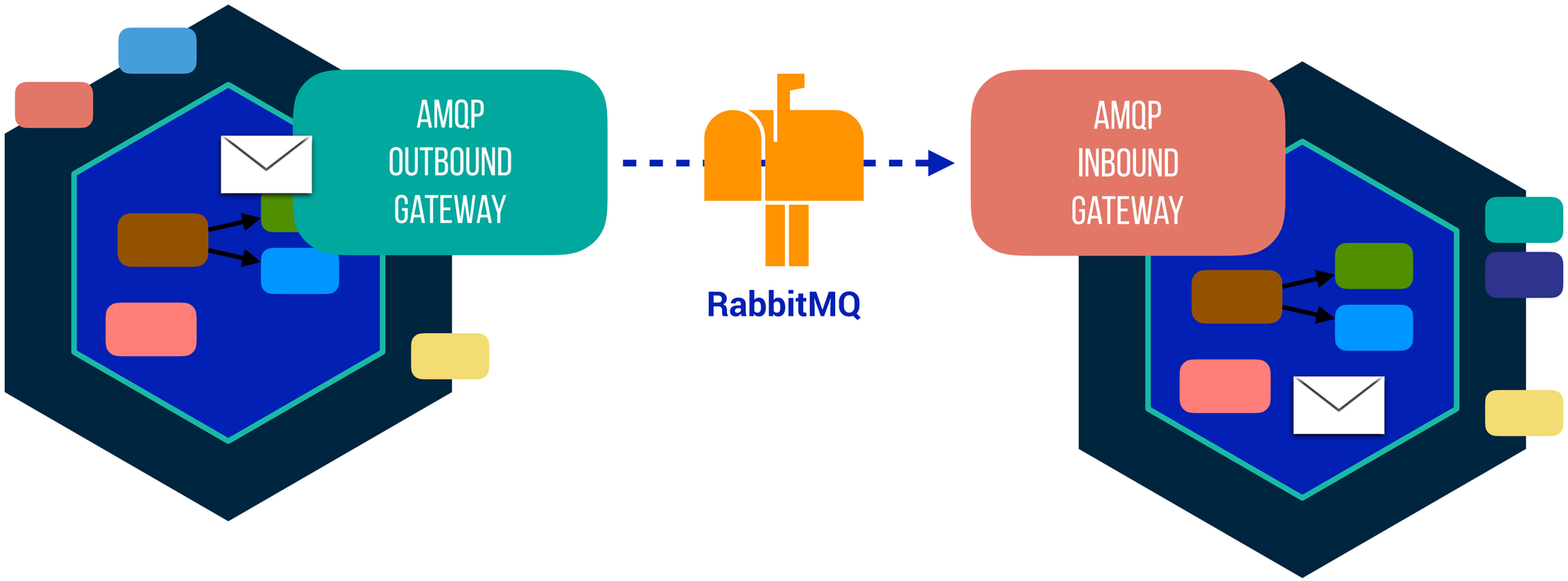

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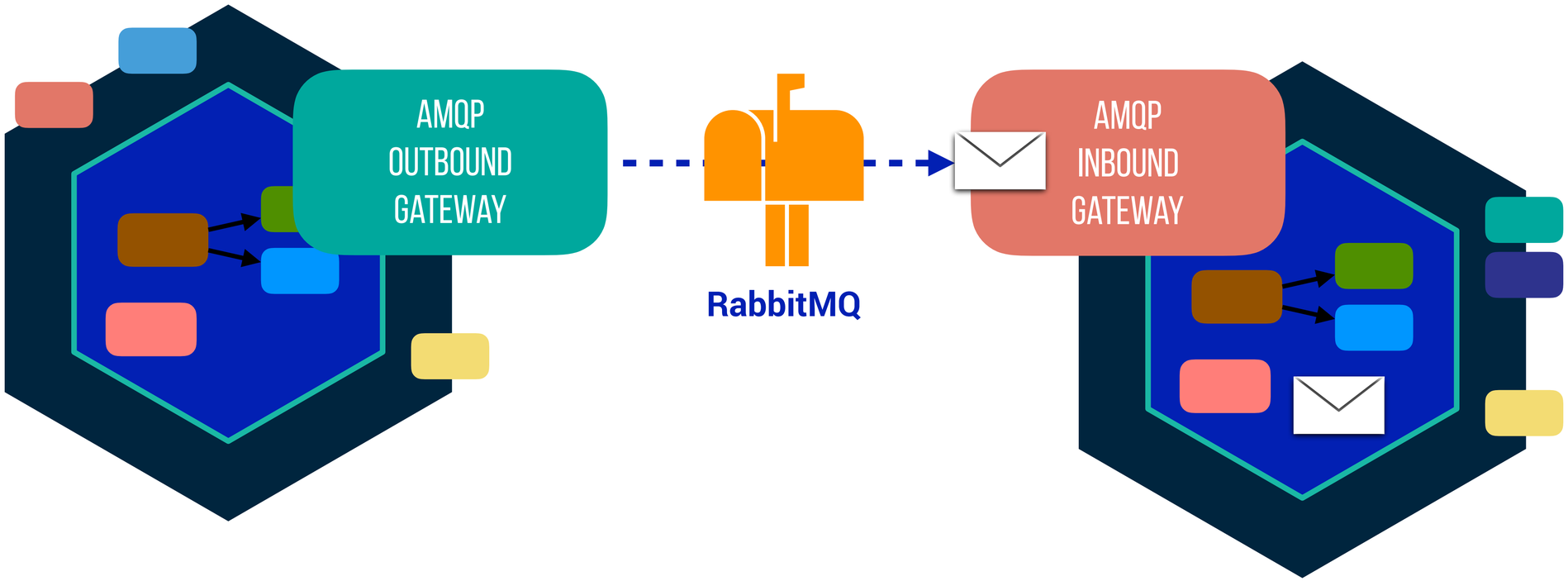

QUEUES / LOAD BALANCING

RabbitMQ

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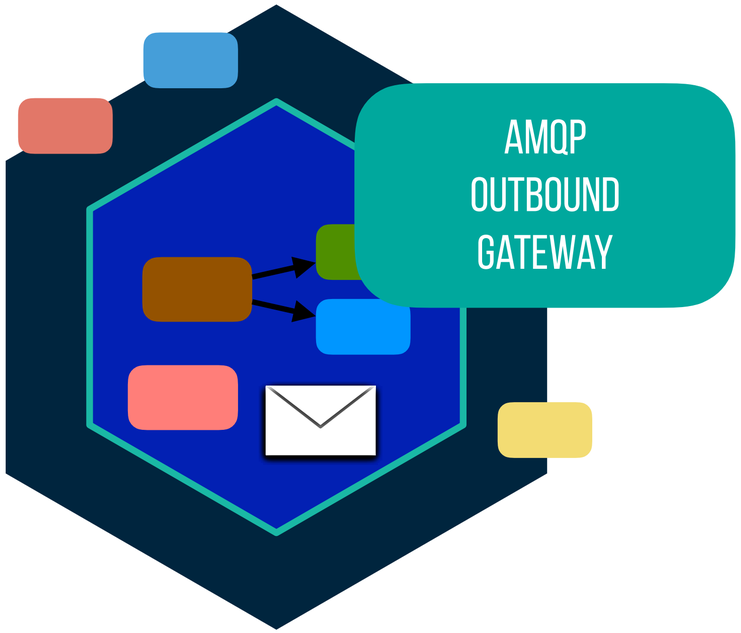

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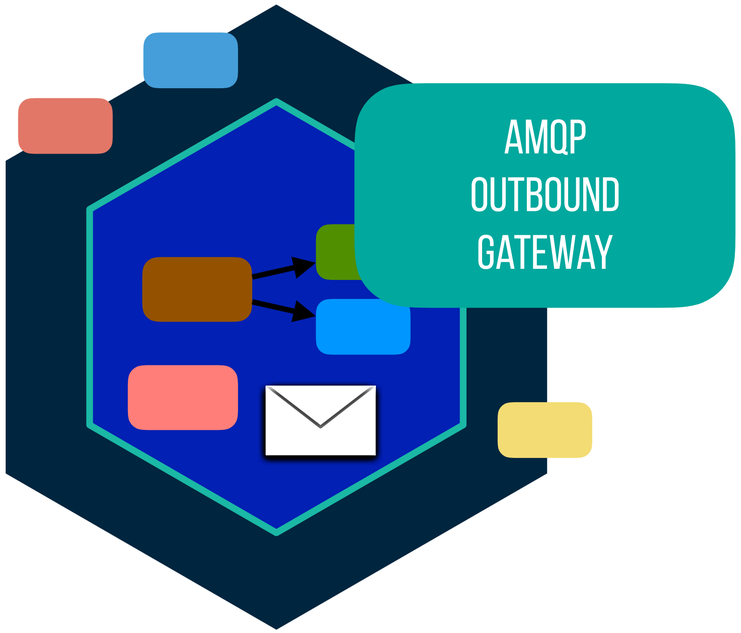

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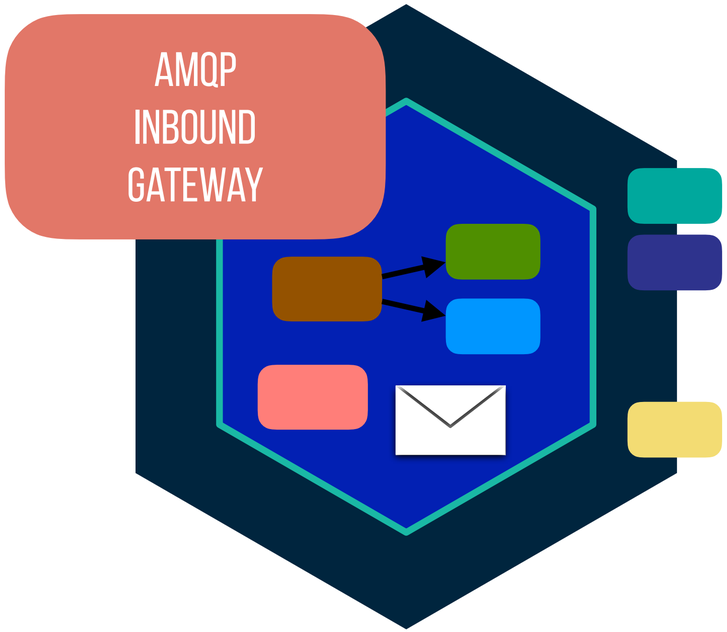

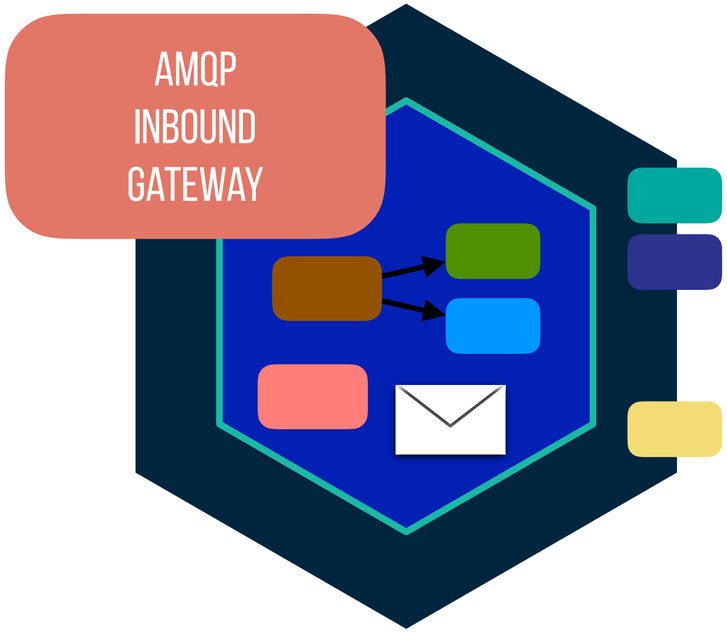

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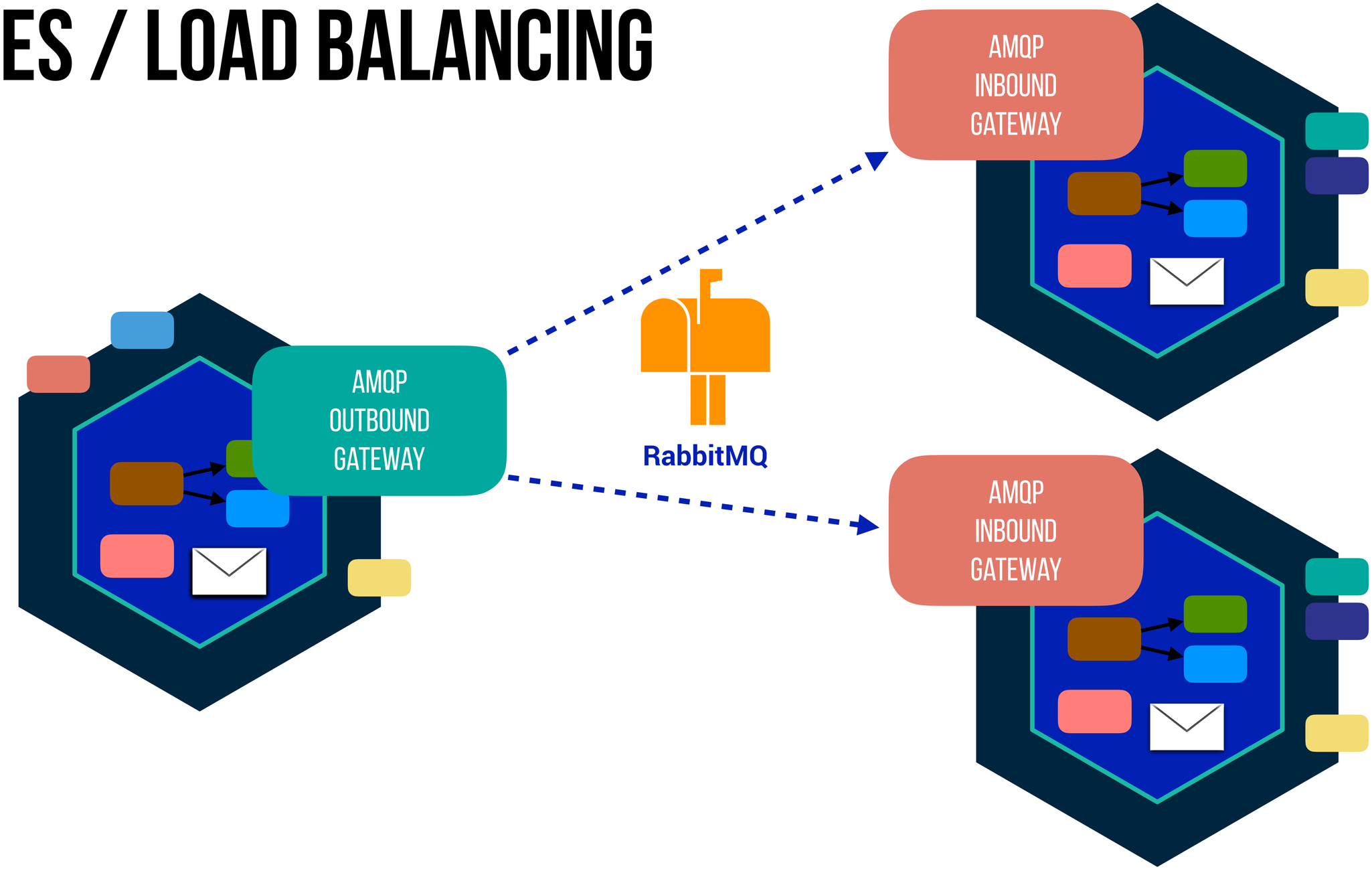

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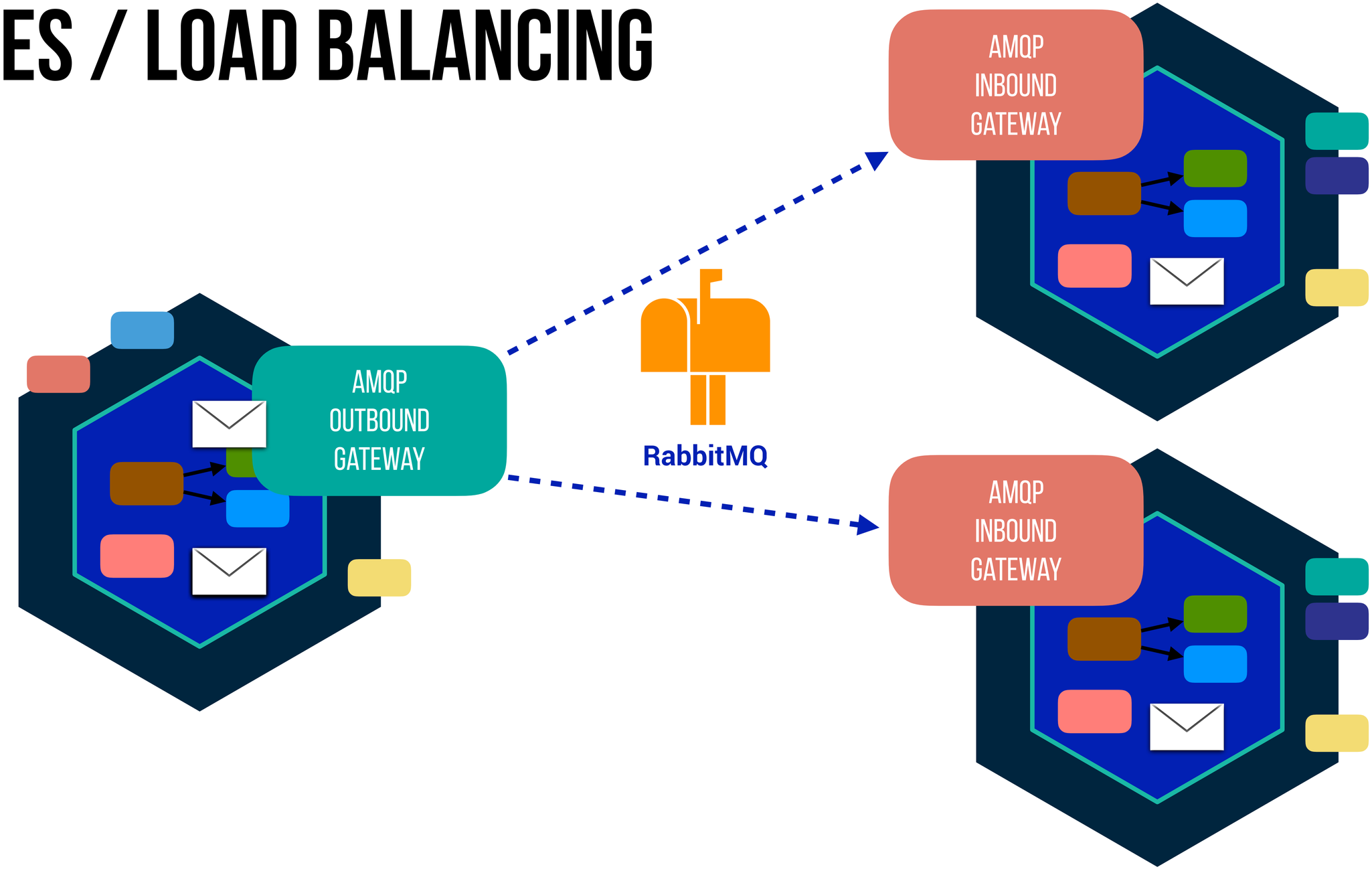

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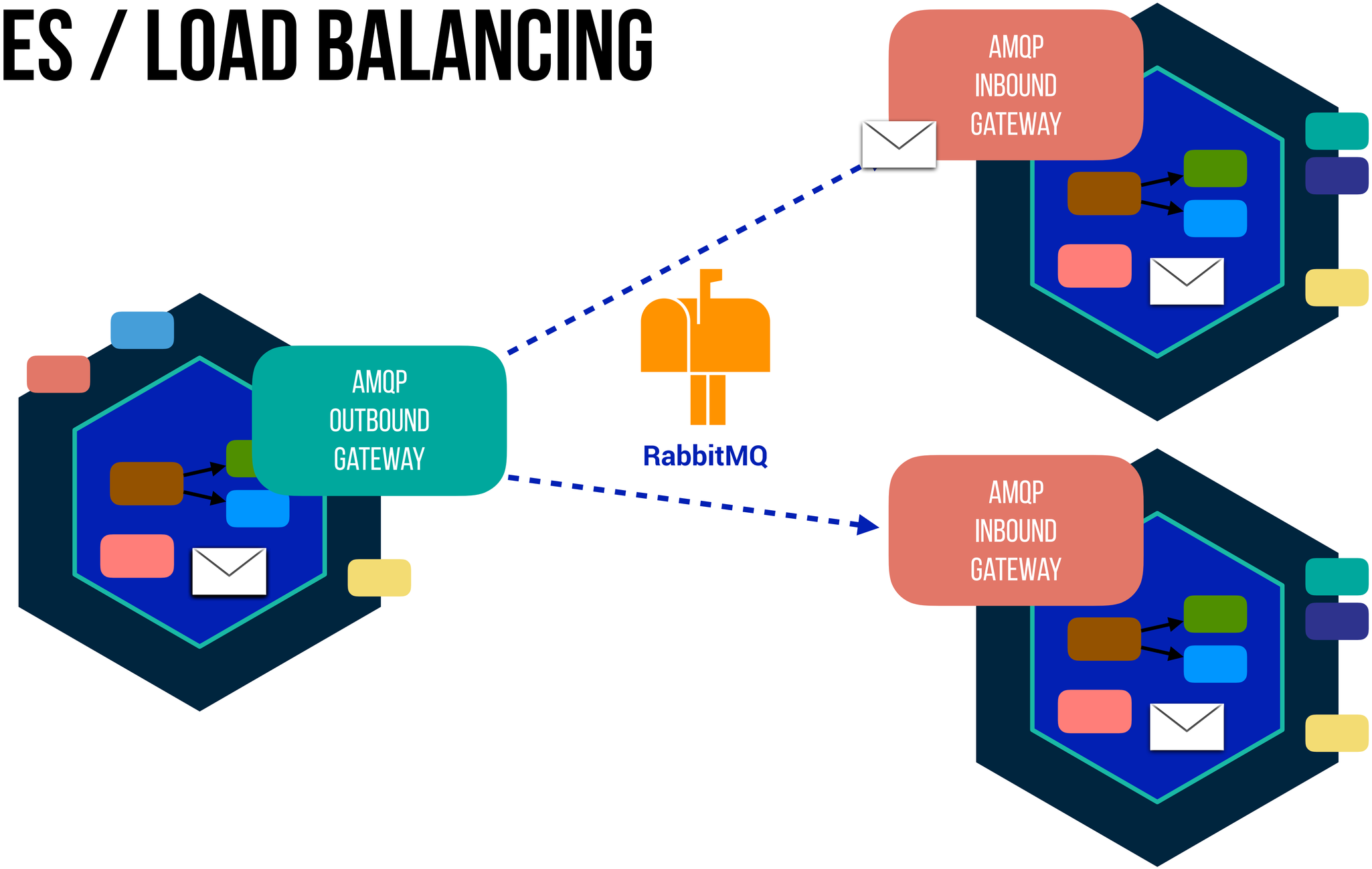

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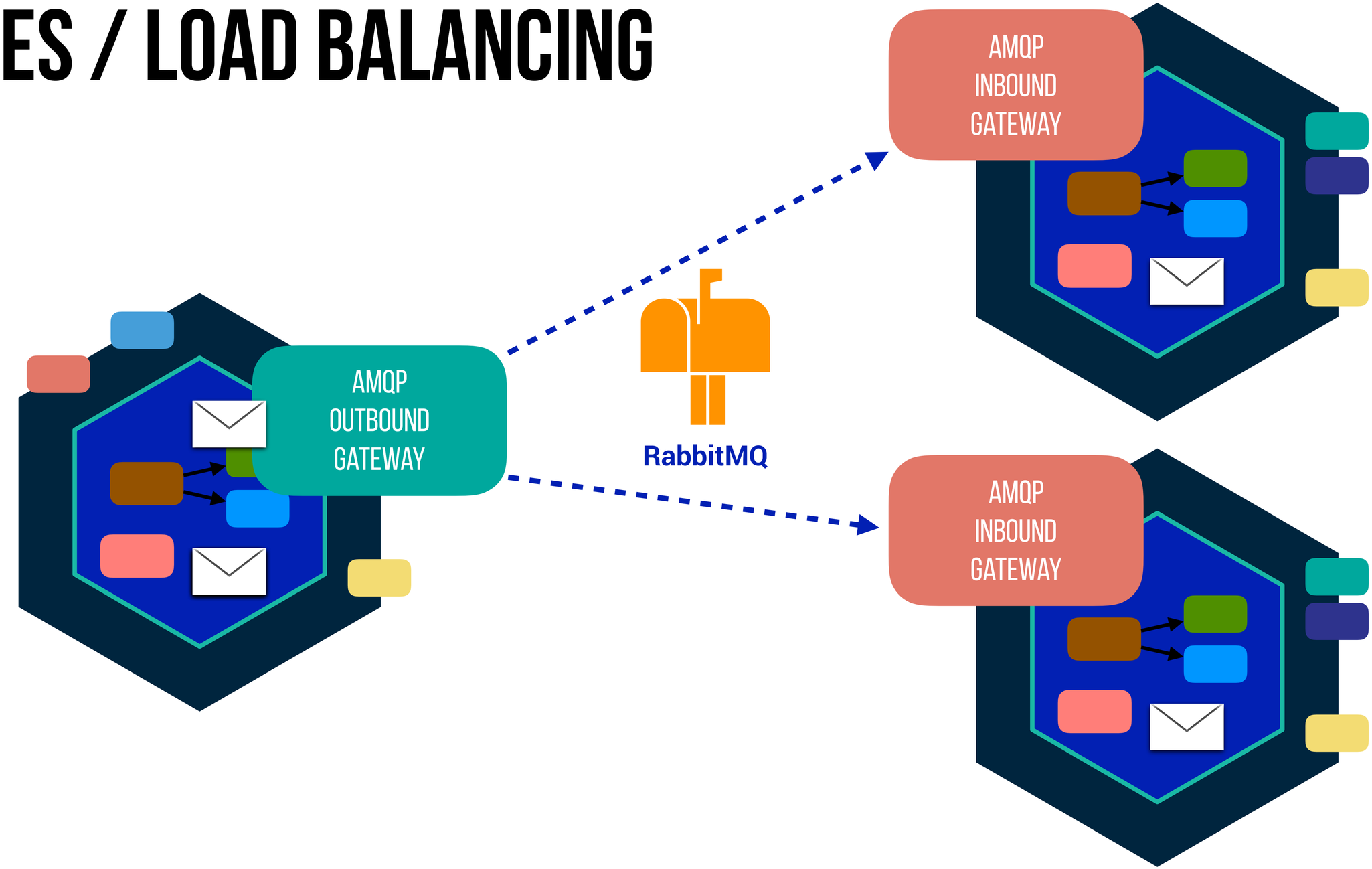

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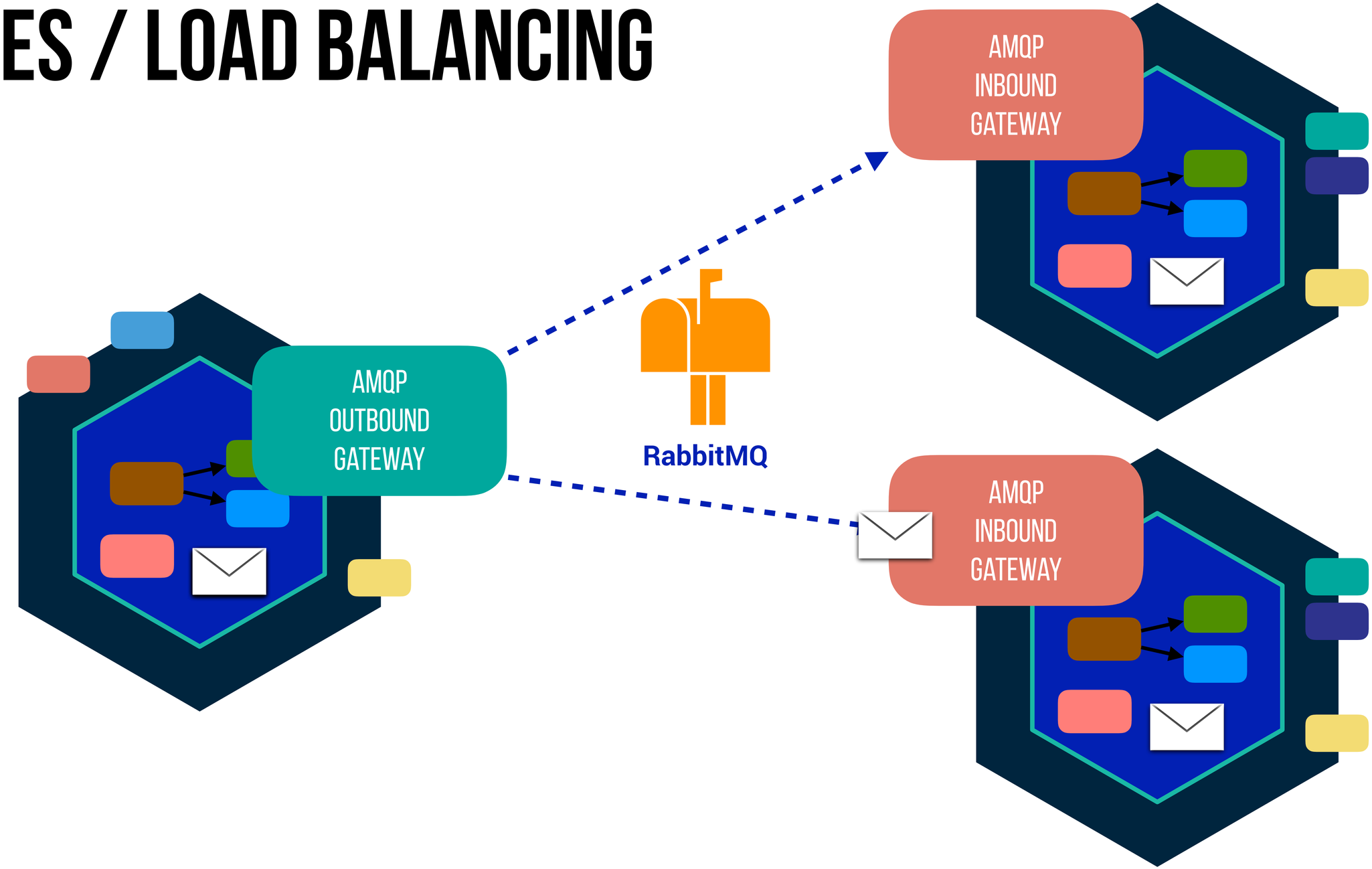

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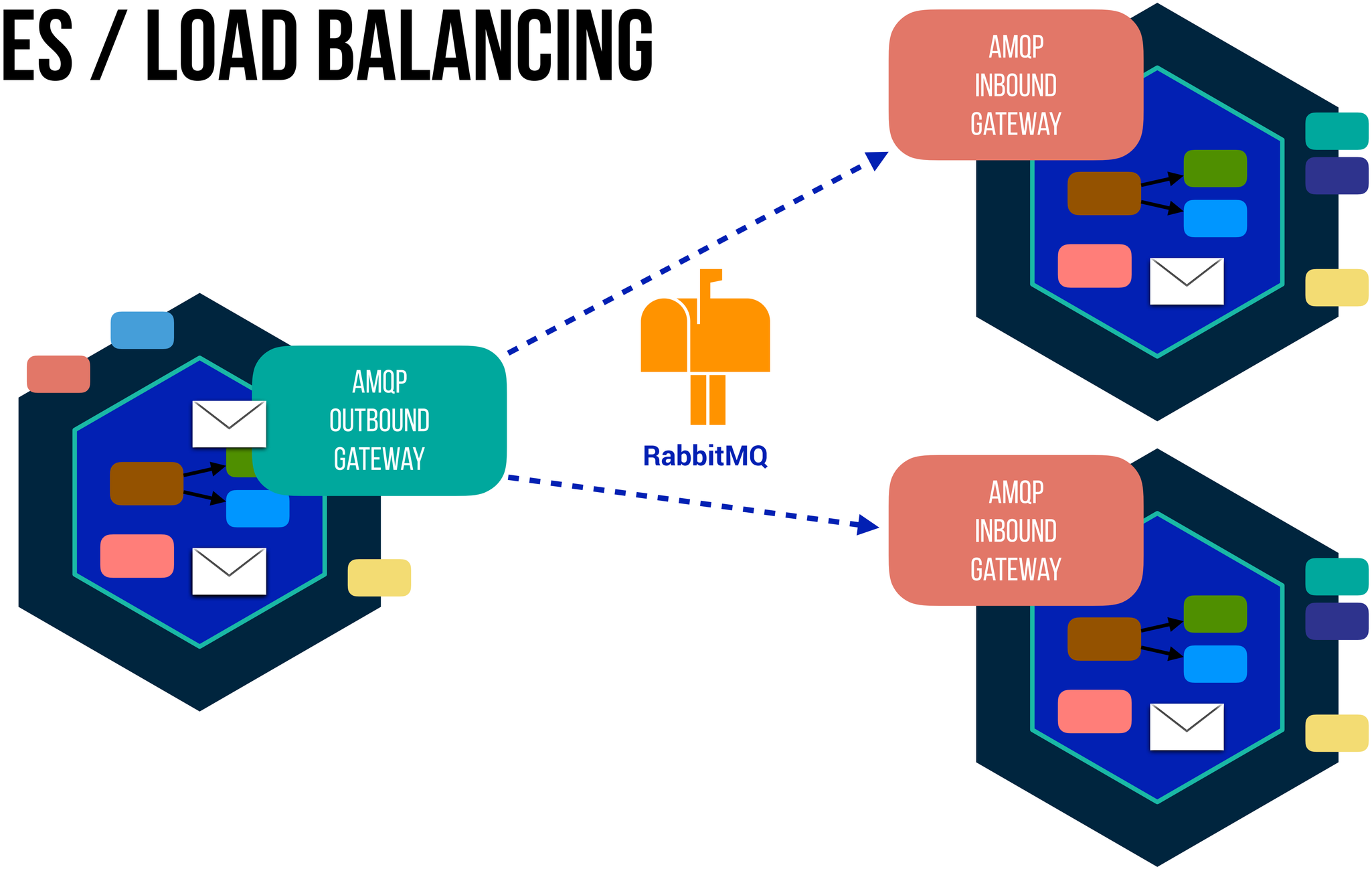

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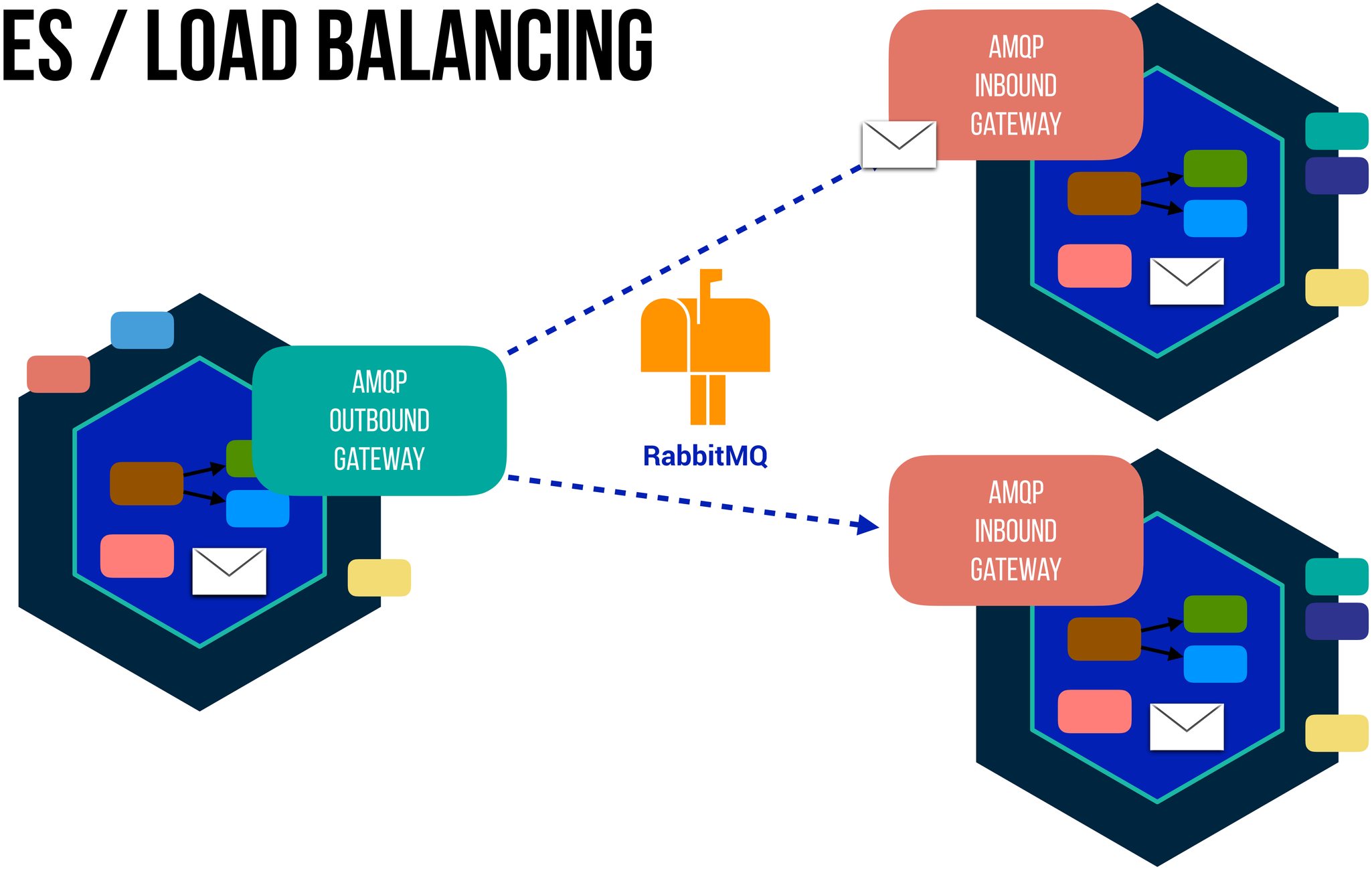

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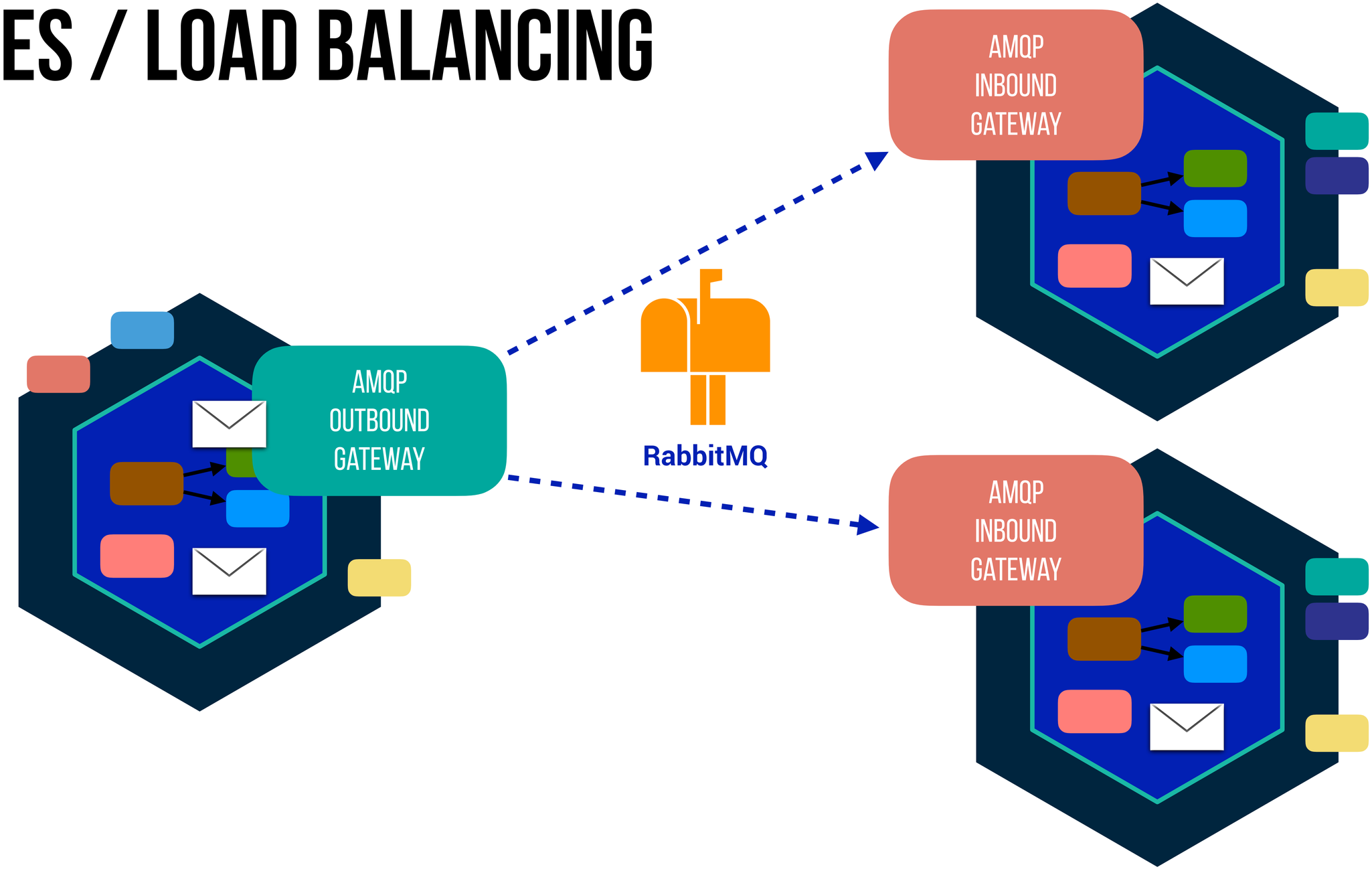

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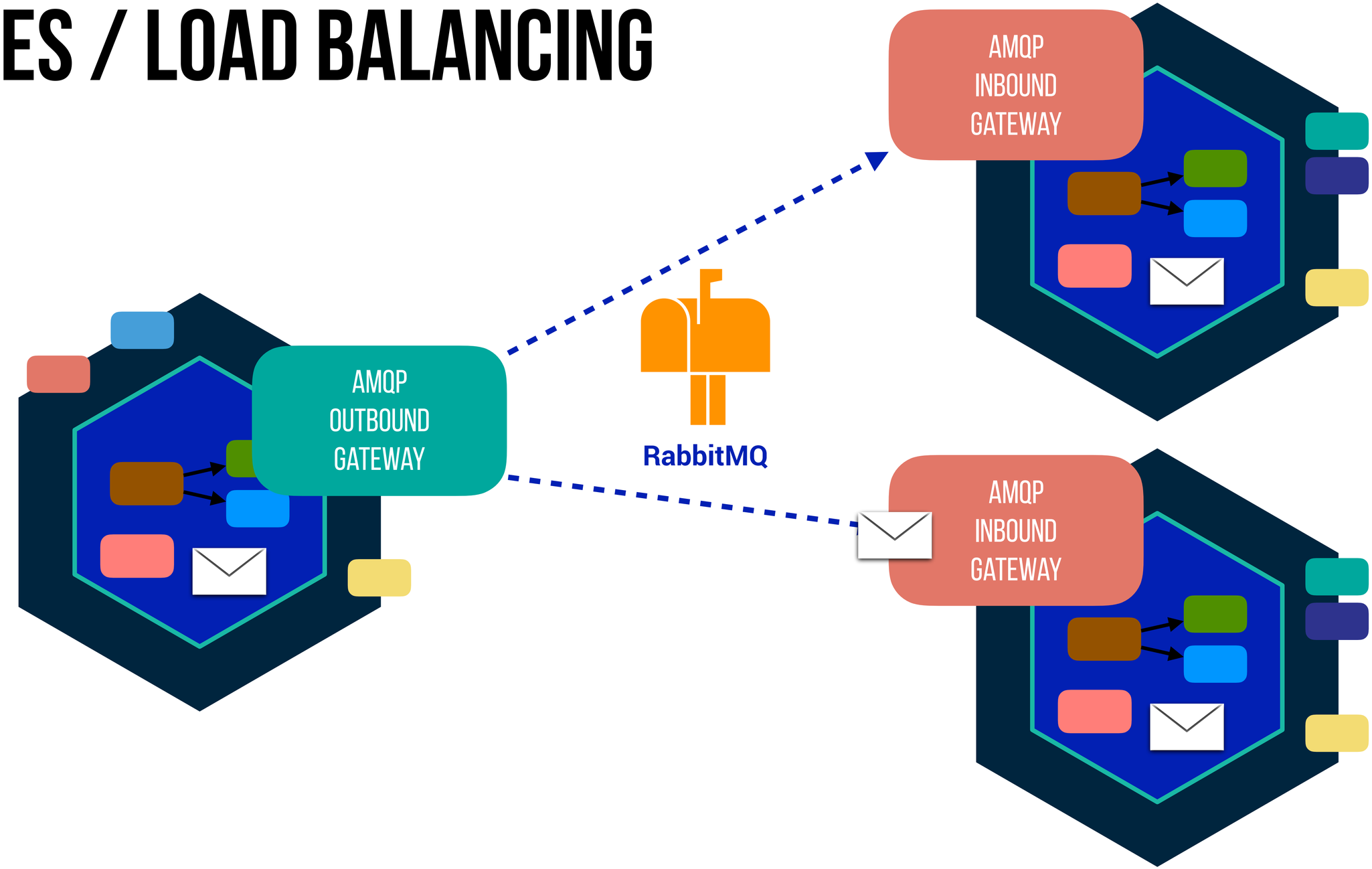

PUBLISH - SUBSCRIBE

Kafka

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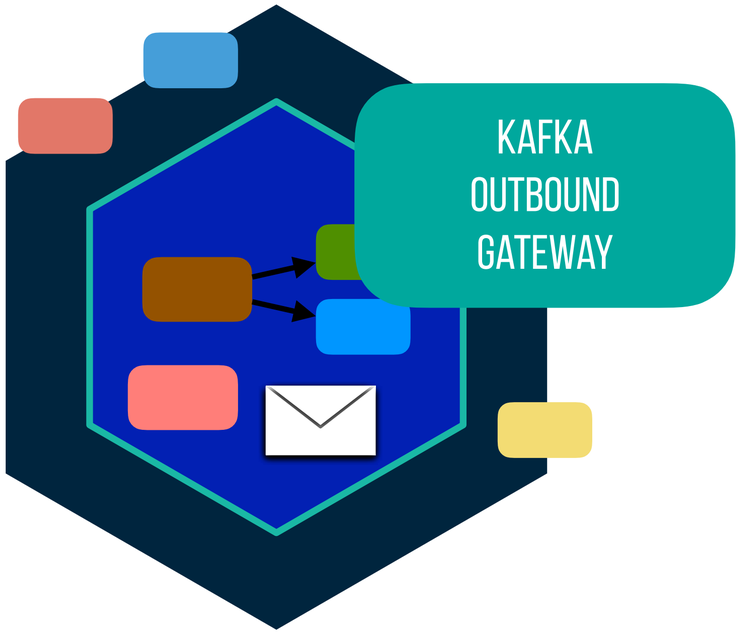

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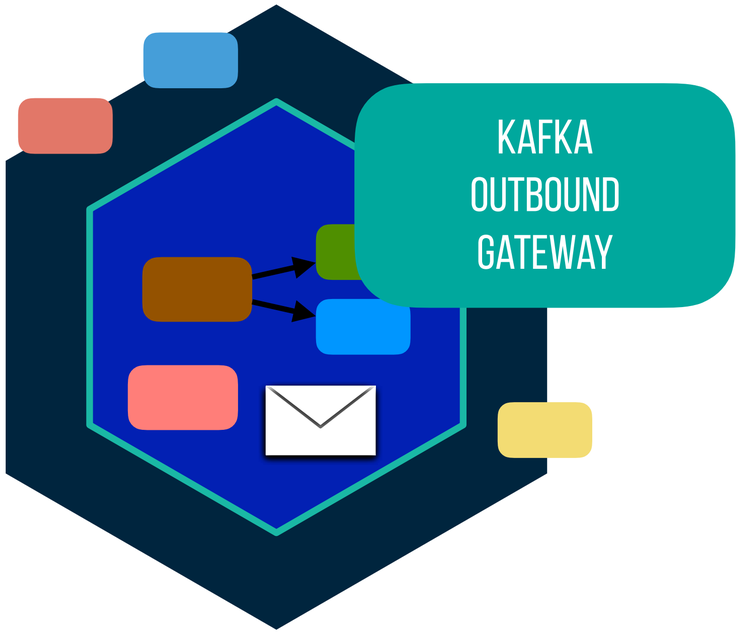

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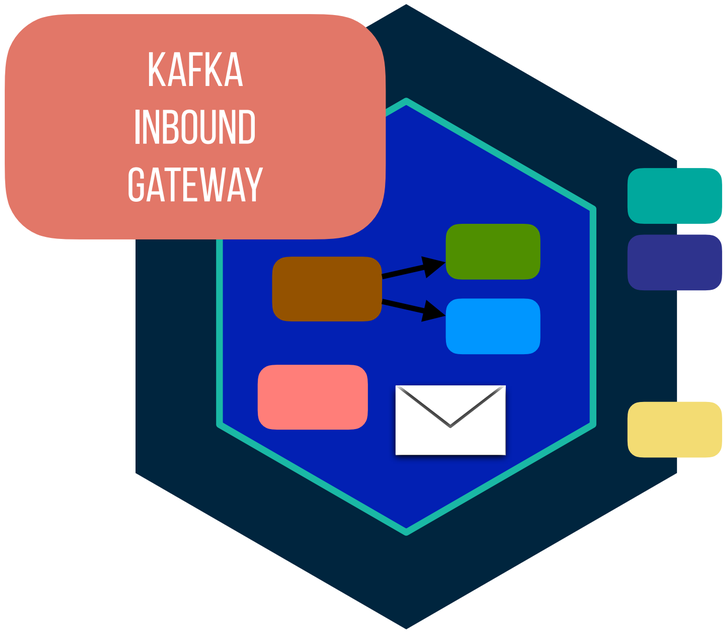

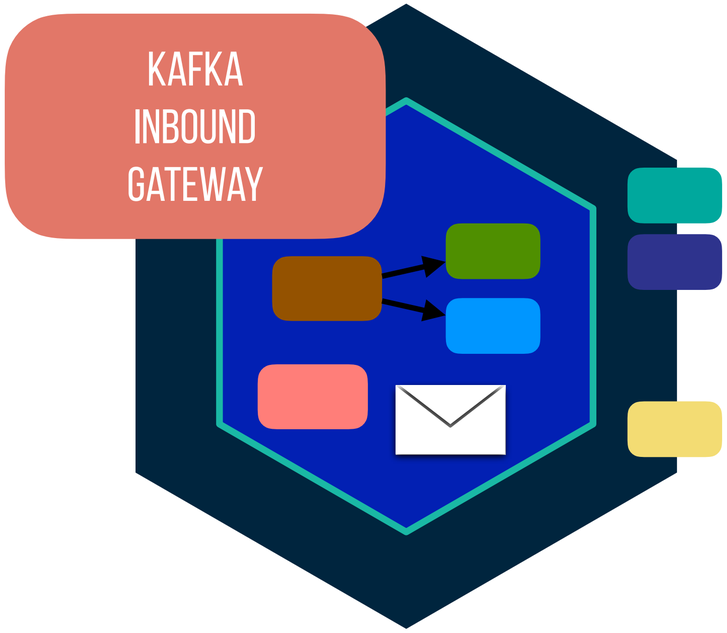

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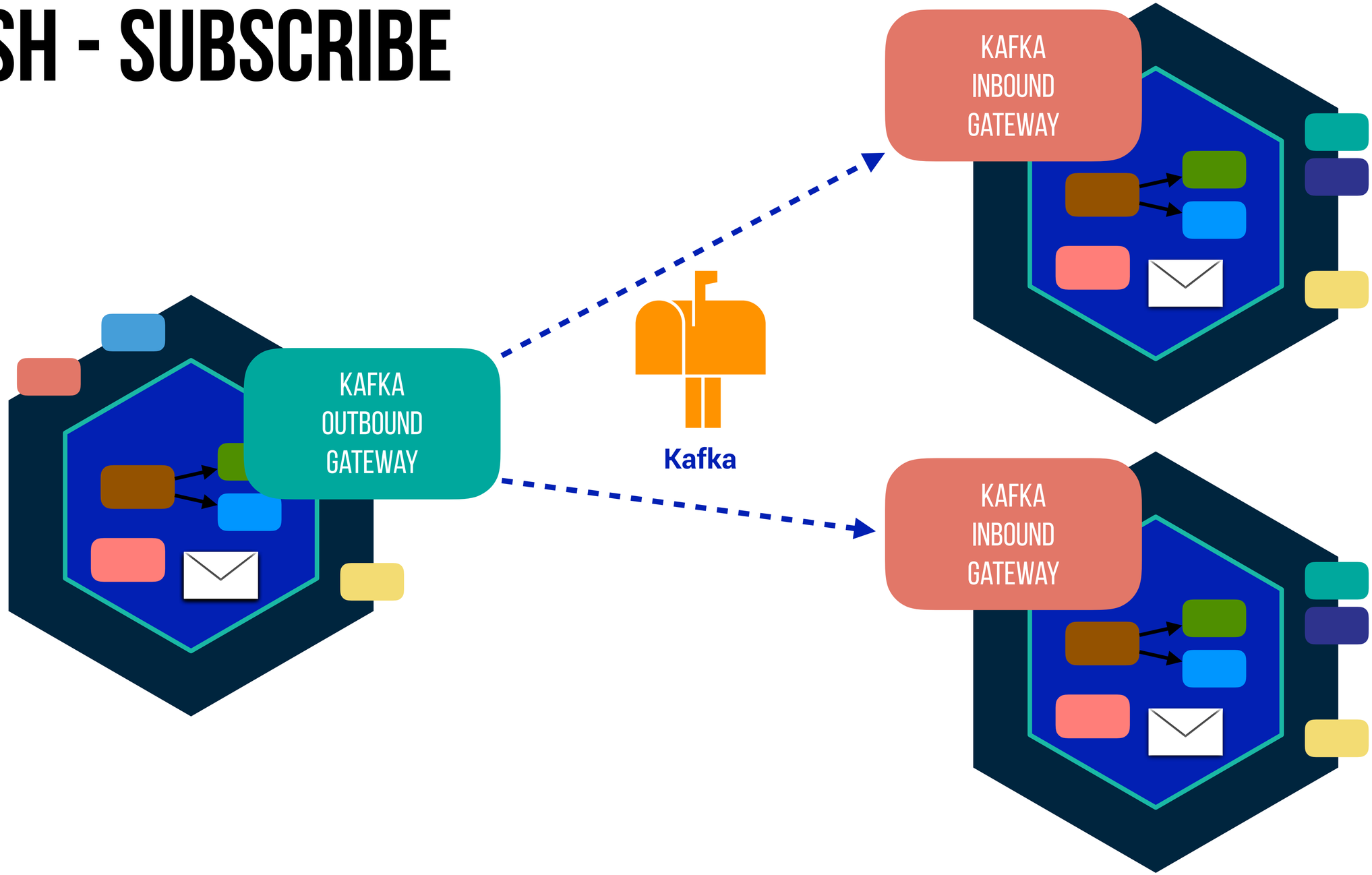

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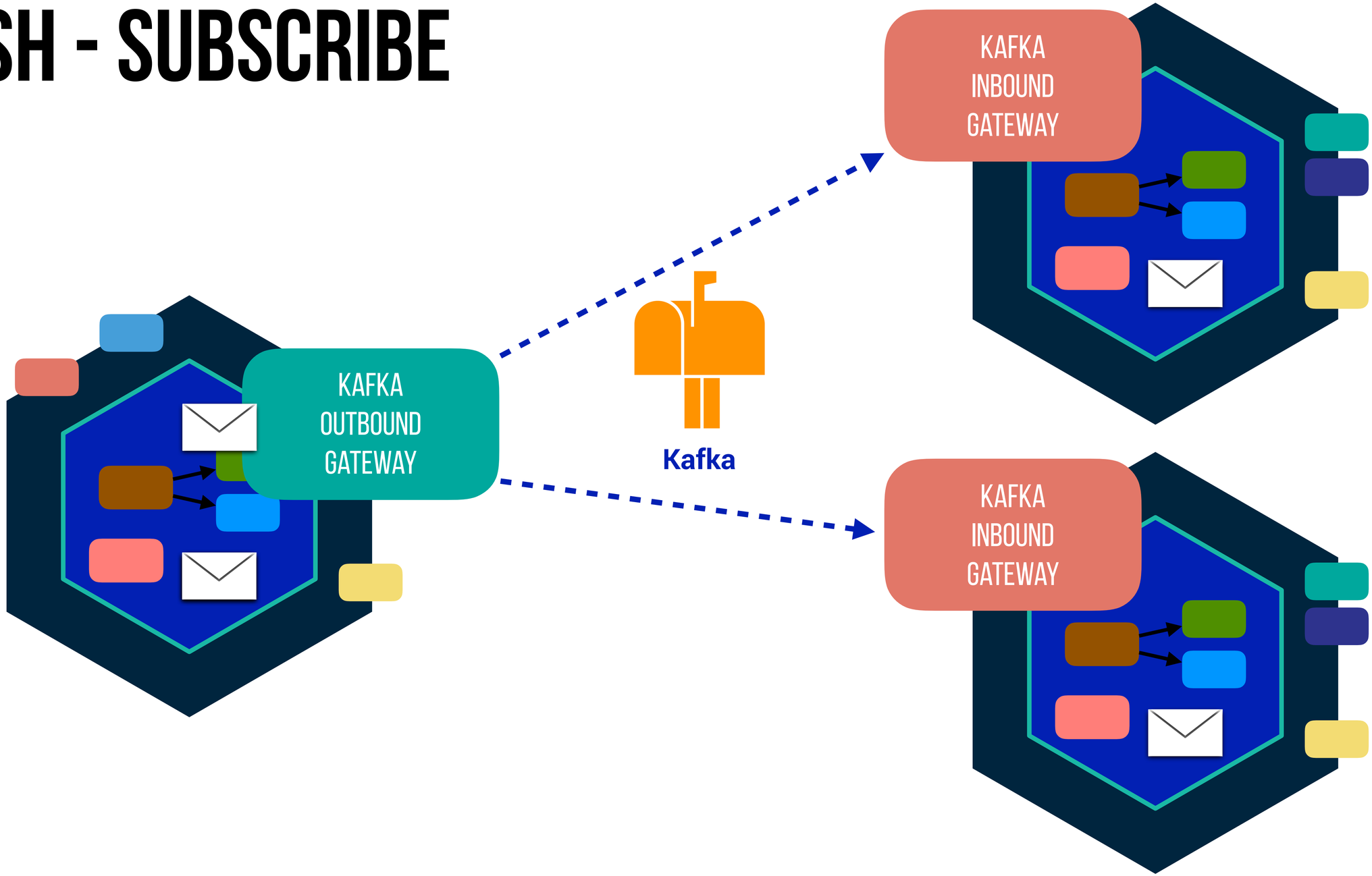

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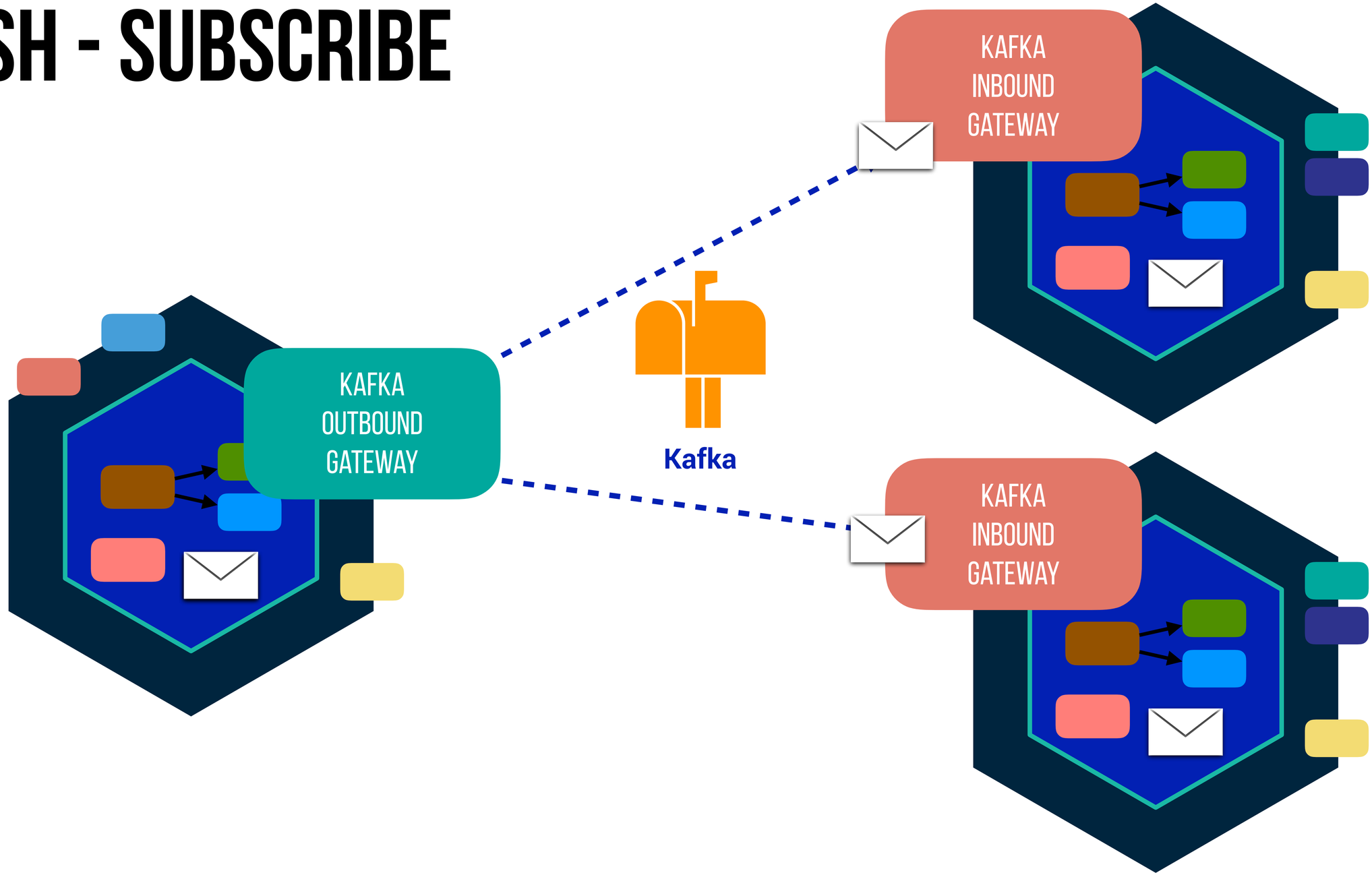

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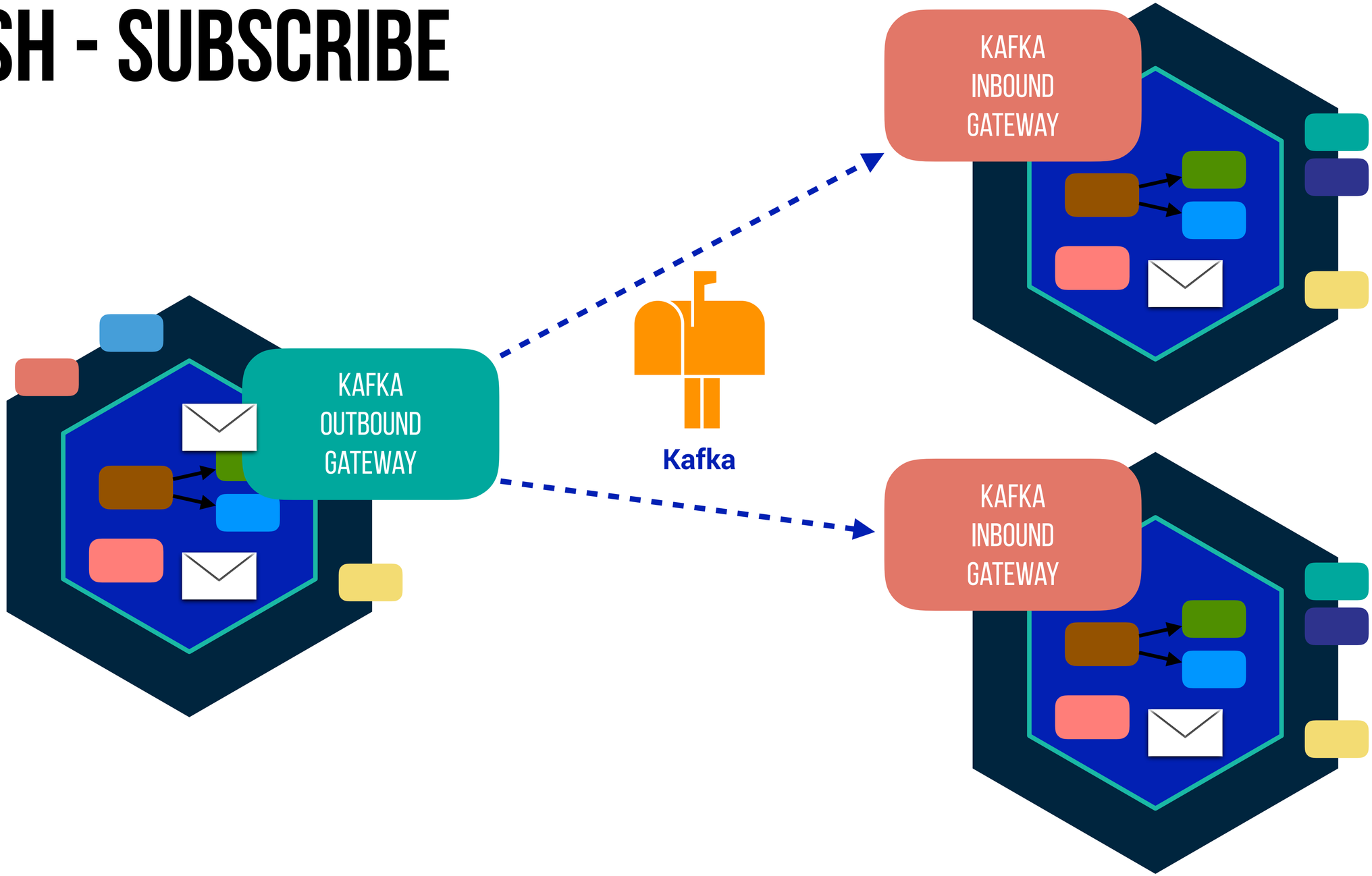

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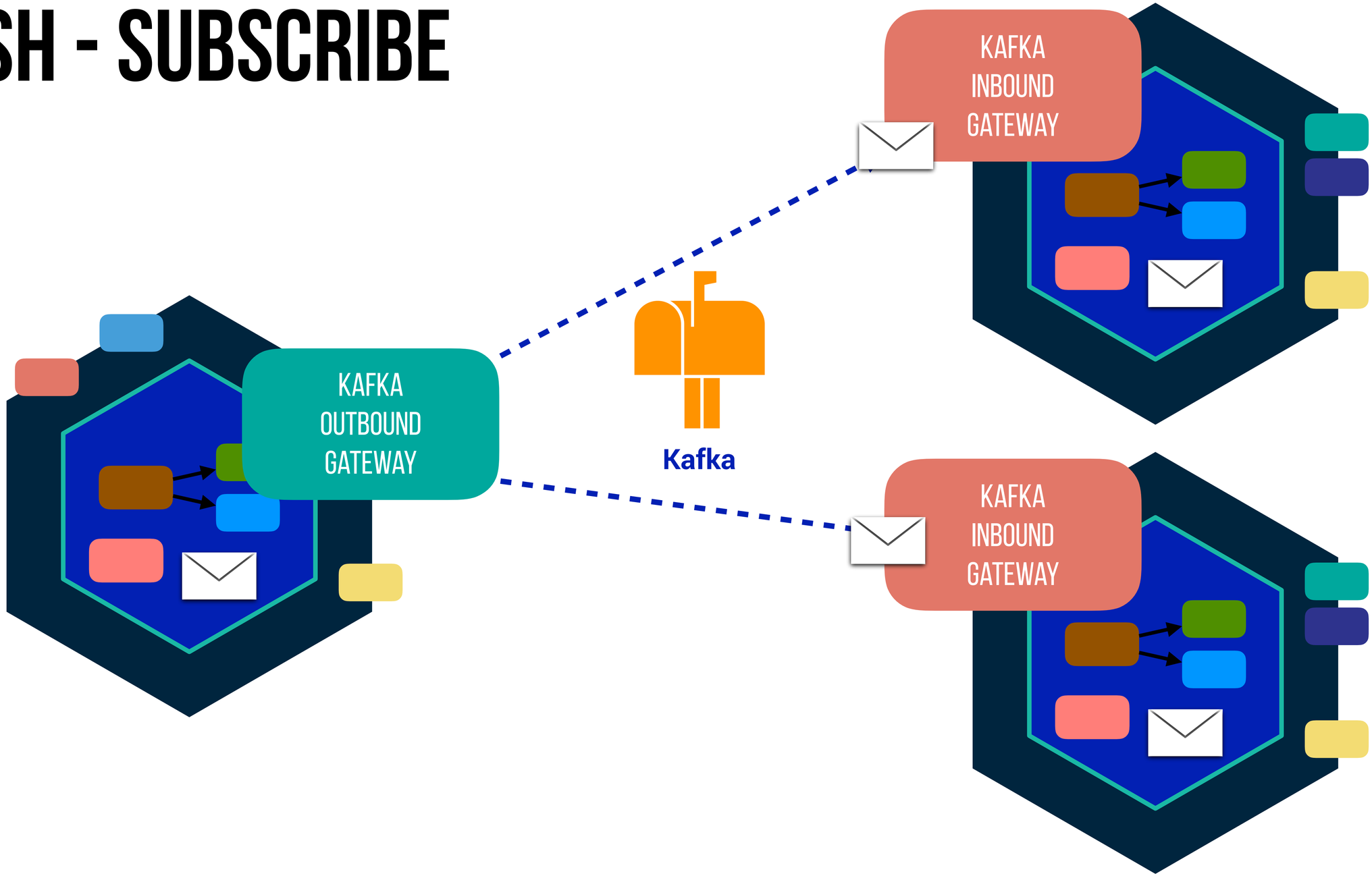

INTRODUCING PERSISTENCE

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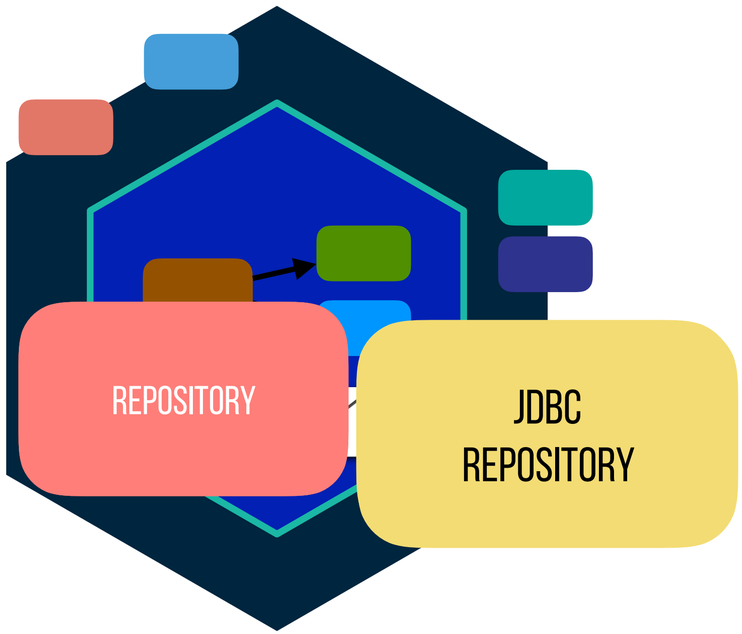

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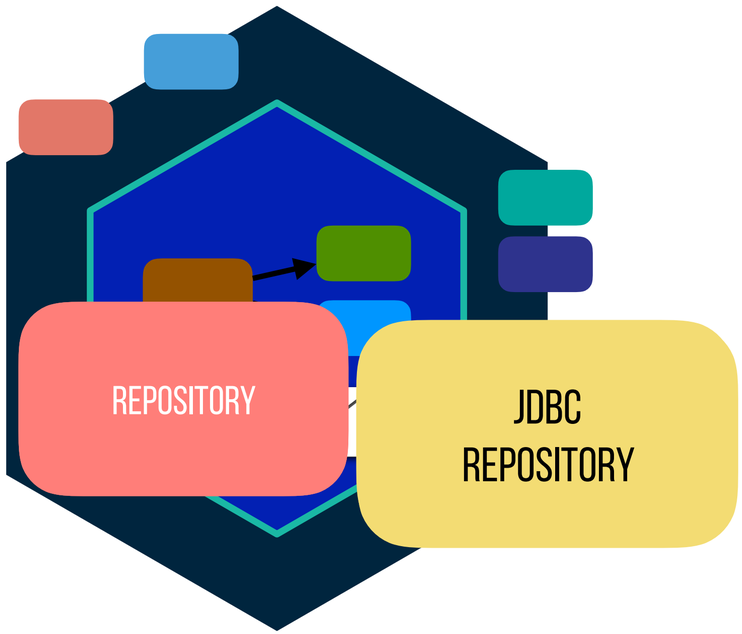
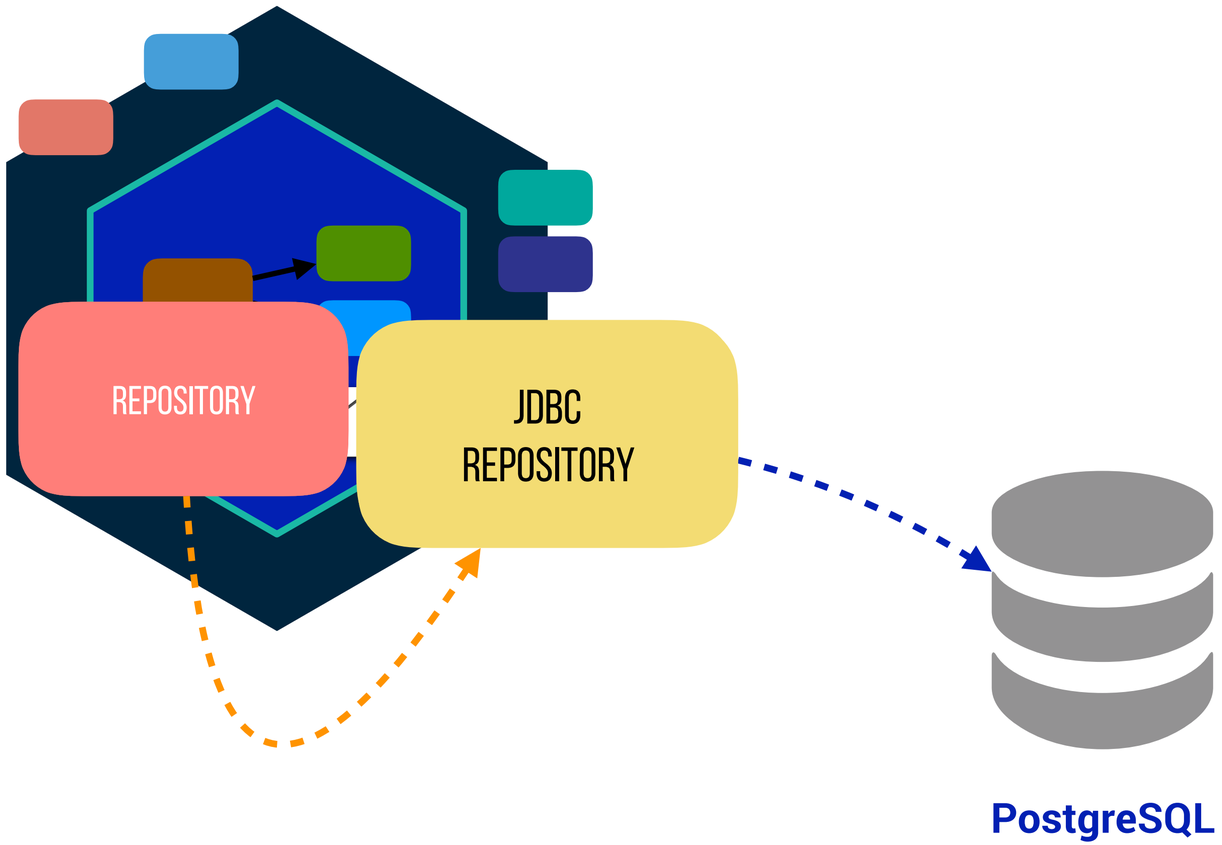


PostgreSQL

INTRODUCING PERSISTENCE



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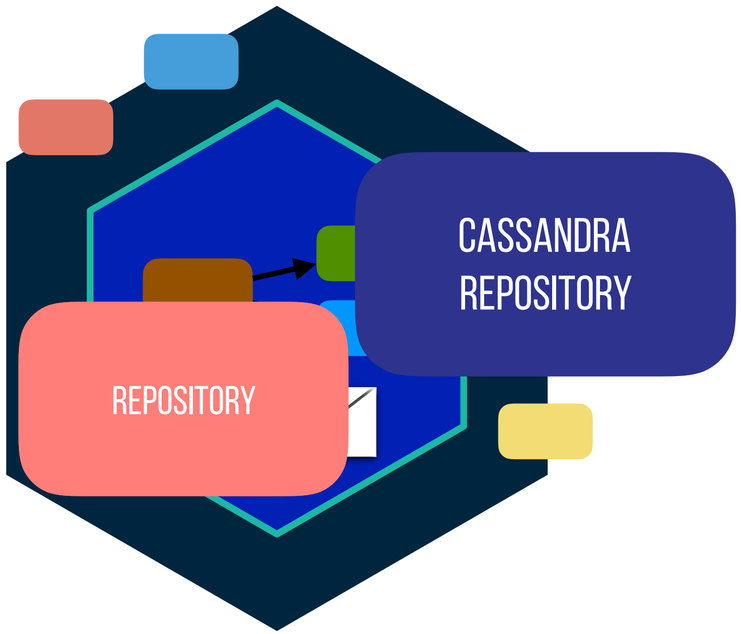

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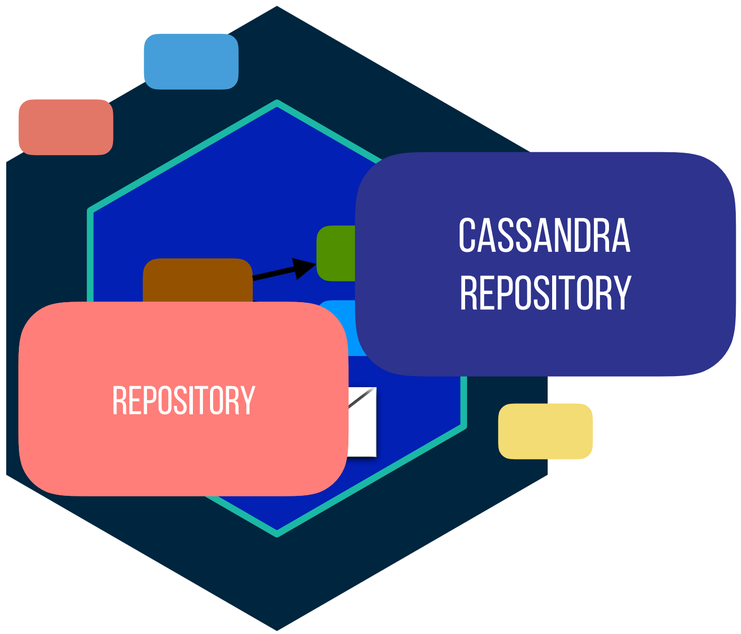
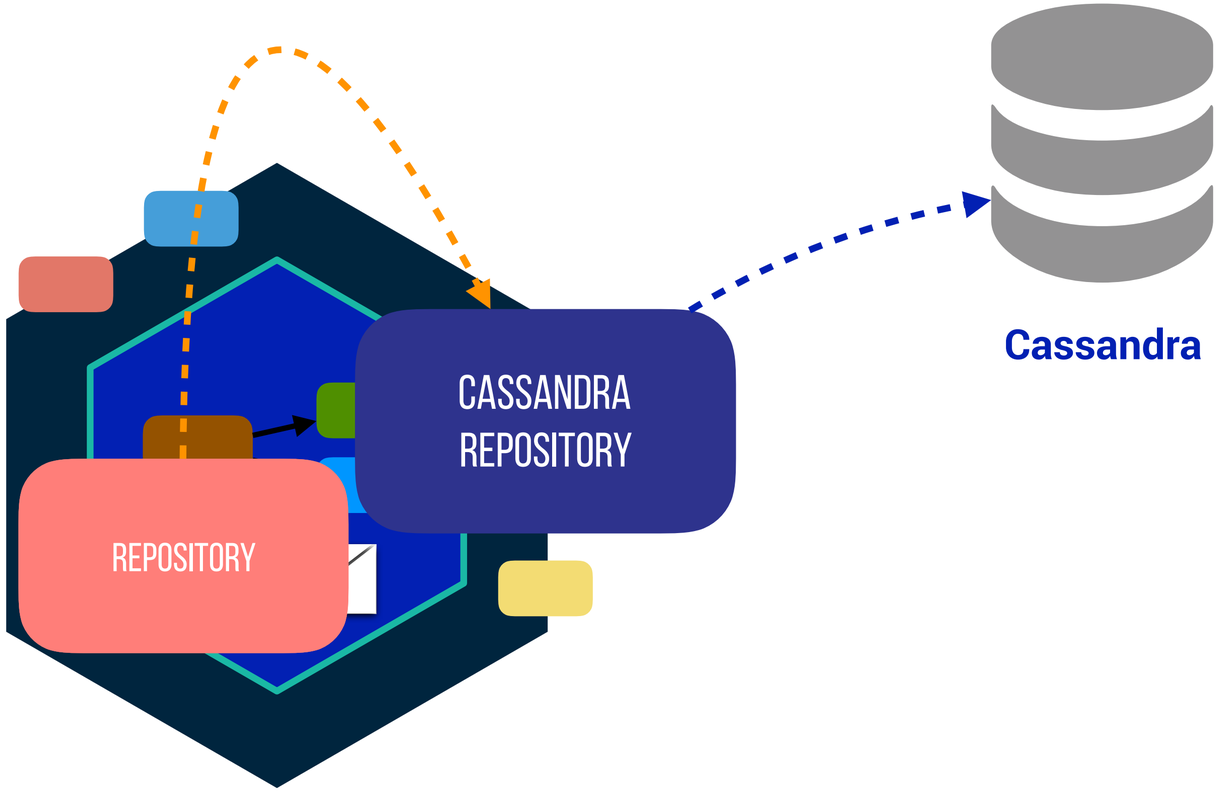
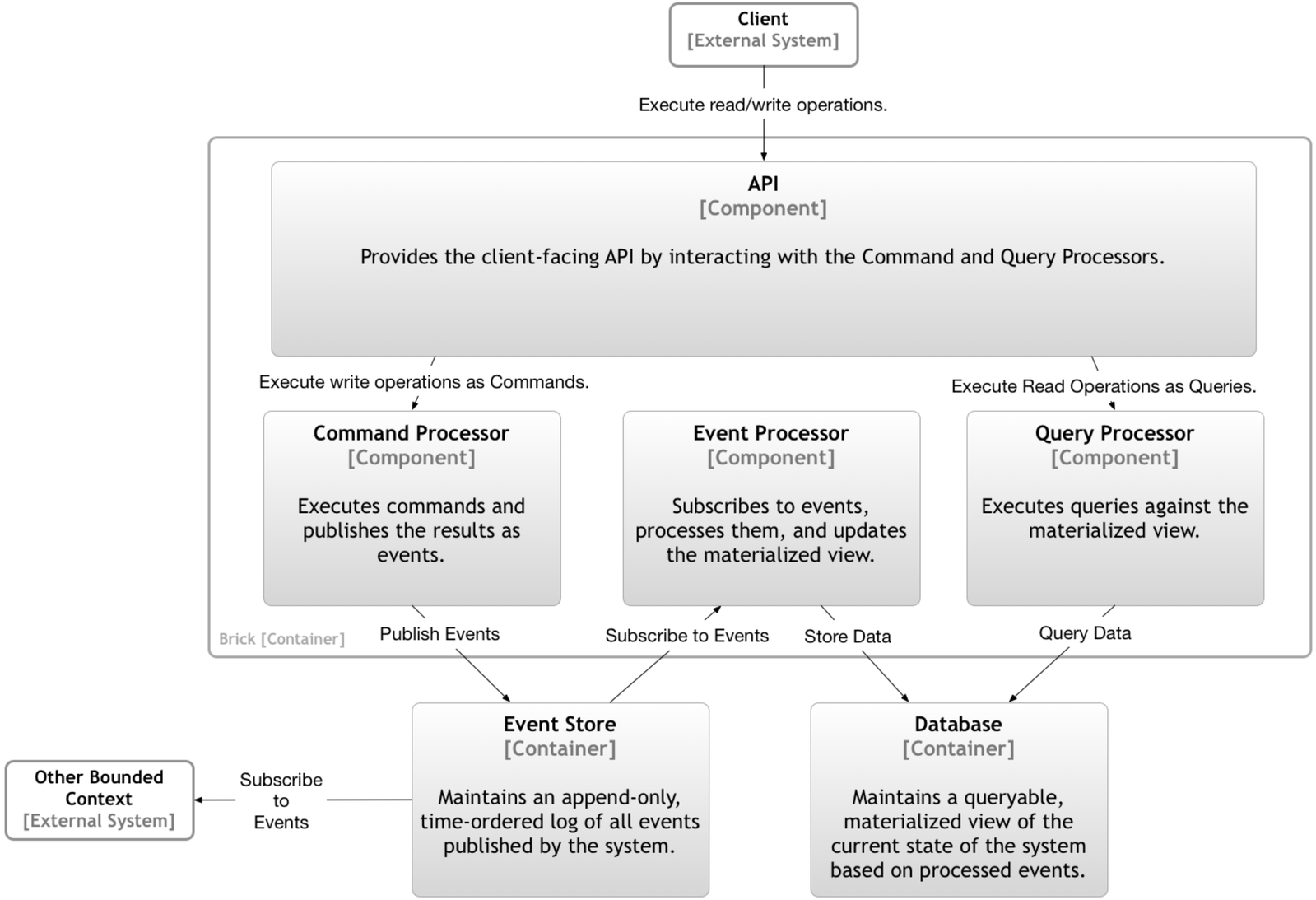


Cassandra

INTRODUCING PERSISTENCE



EVENT SOURCING / CQRS



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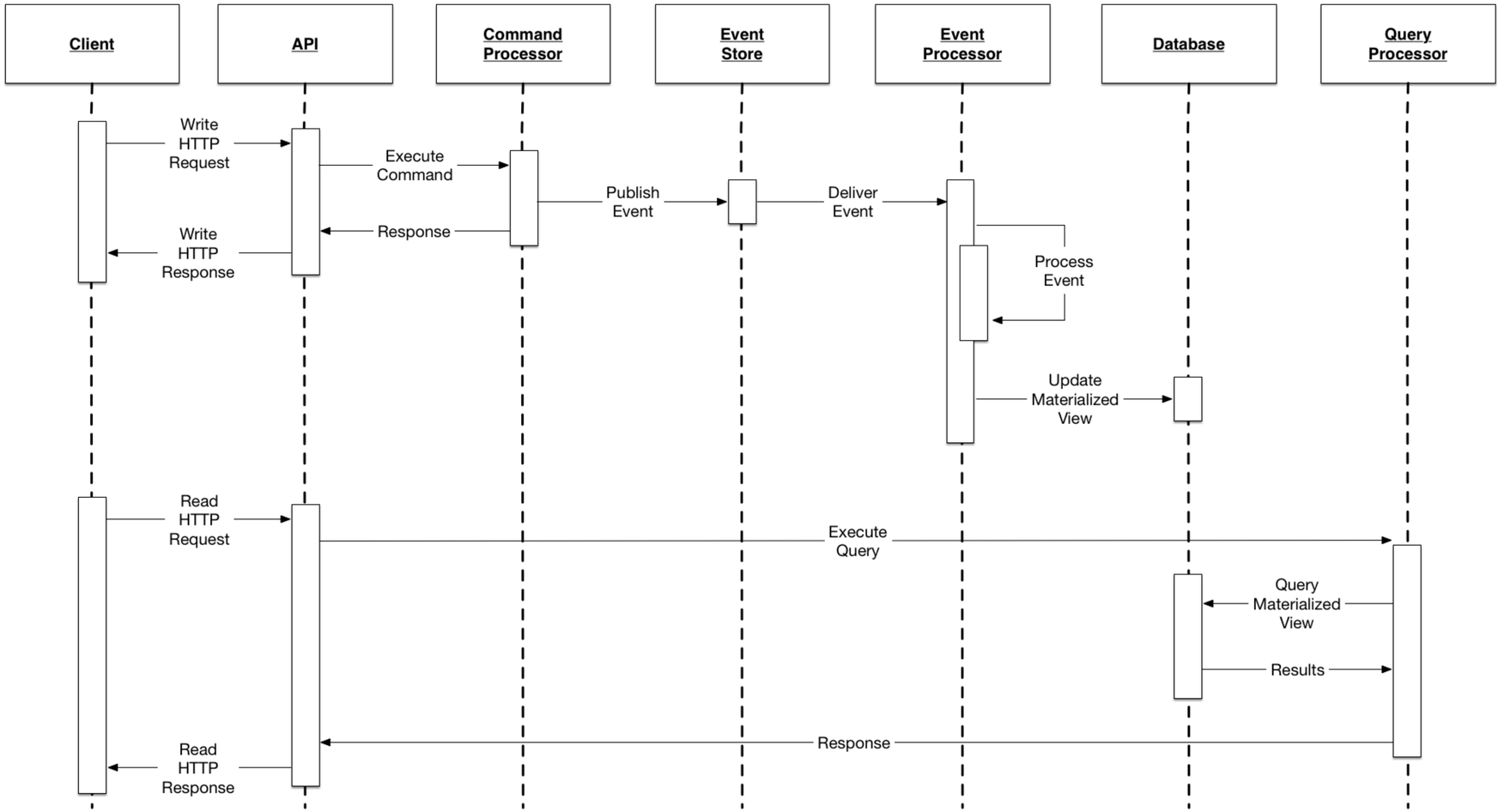
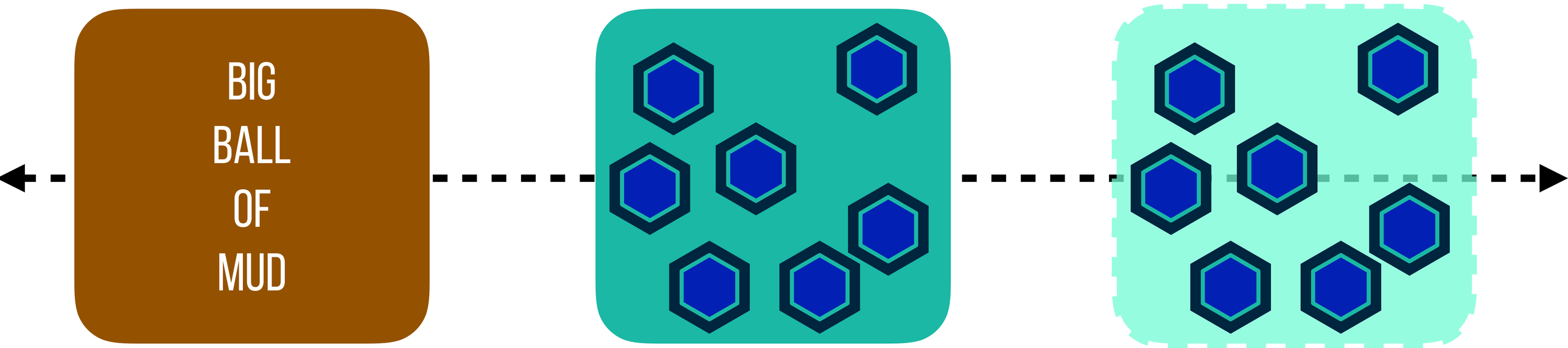


DEPLOYMENT TOPOLOGY SPECTRUM



Monolith

Modular Monolith

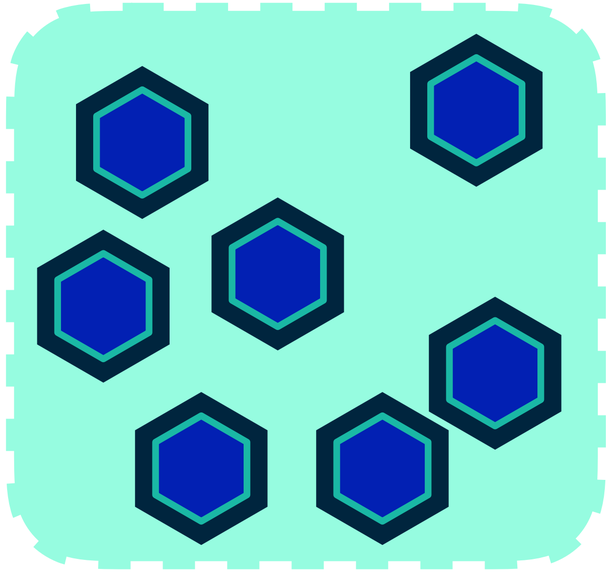
Microservices

MODULES ARE MODULES

Modular Monolith

- High Cohesion
- Low Coupling
- Business Capability Focus
- Bounded Contexts / Aggregates
- Data Encapsulation
- Substitutable
- Composable

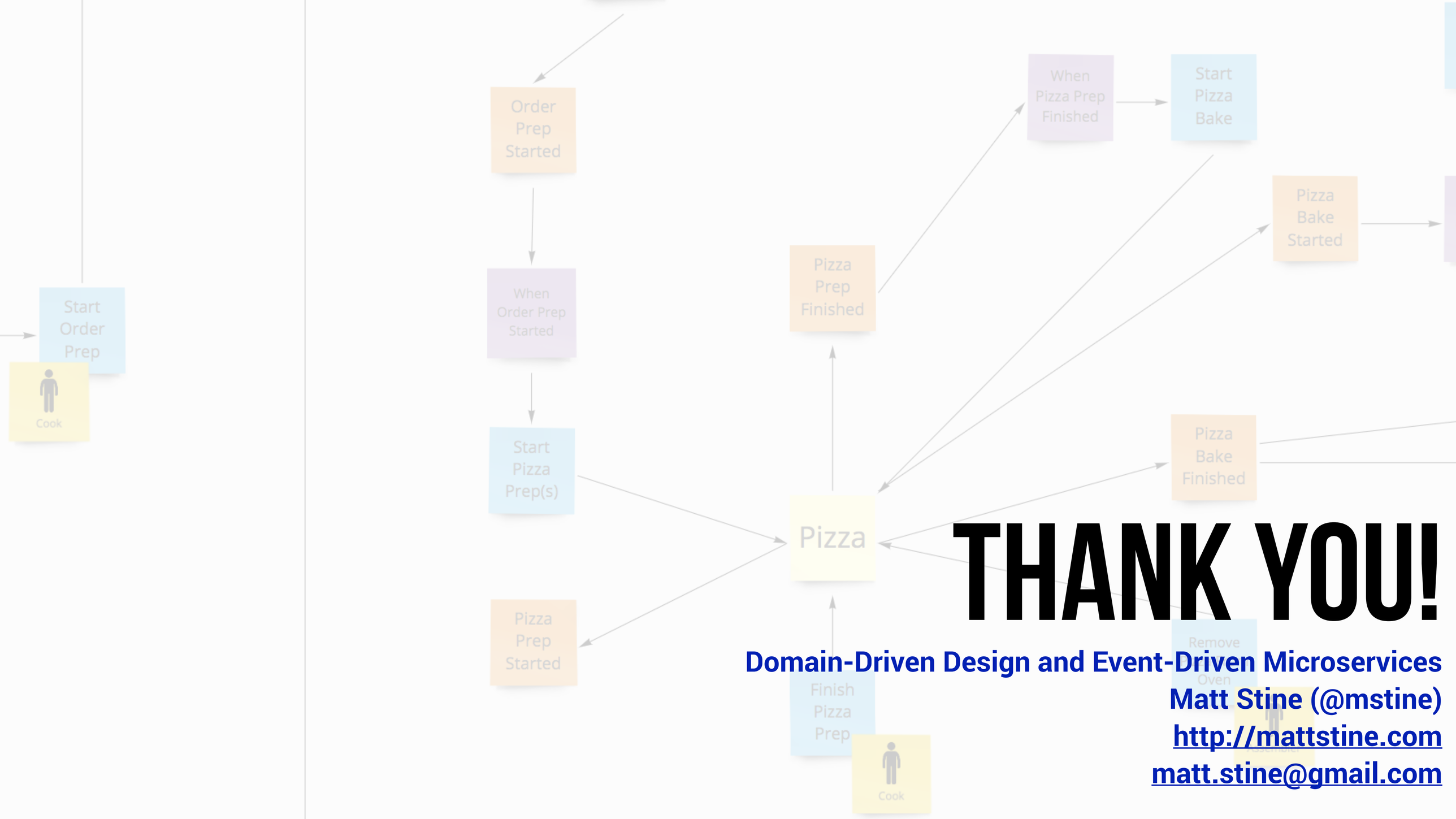
Microservices



- Individually Deployable
- Individually Upgradeable
- Individually Replaceable
- Individually Scalable
- Heterogeneous Tech Stacks

The criteria for effectively creating modules inside of a monolithic codebase translates into effective criteria for microservice modularity.

We want to maintain a modular structure that can exist in either a monolithic or microservices architecture.



THANK YOU!

Domain-Driven Design and Event-Driven Microservices

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