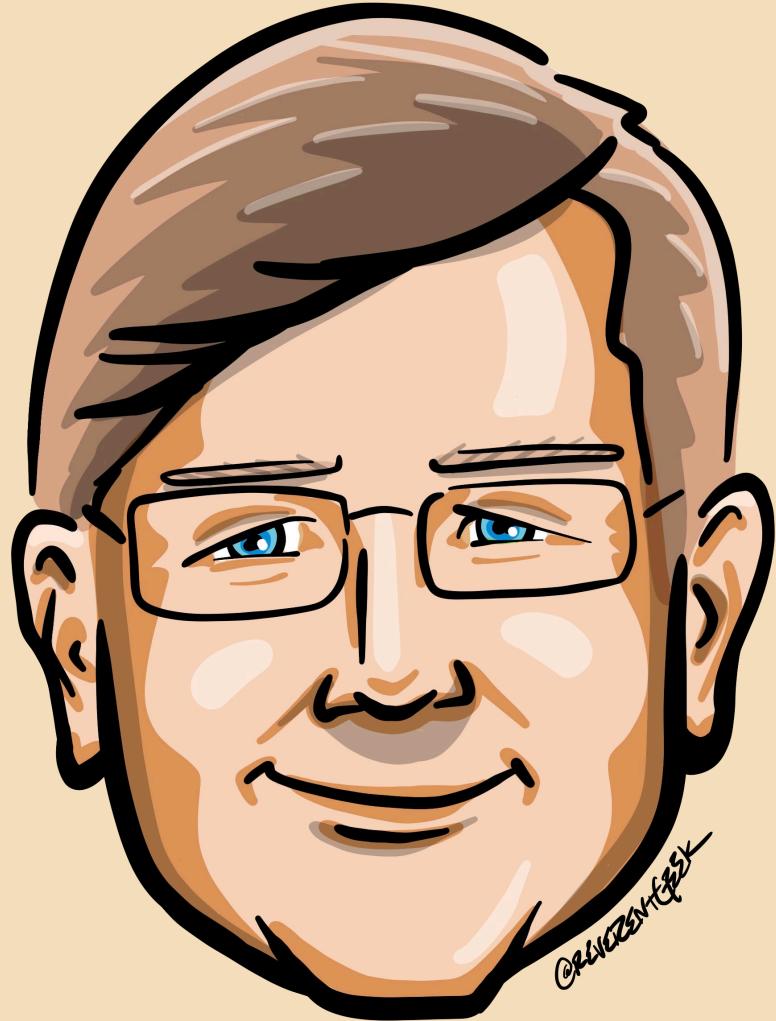




EVENT-DRIVEN ARCHITECTURE IN THE CLOUD

Who is Chad Green

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- 💬 TaleLearnCode
- 🌐 ChadGreen.com
- 🐦 ChadGreen & TaleLearnCode
- linkedin ChadwickEGreen

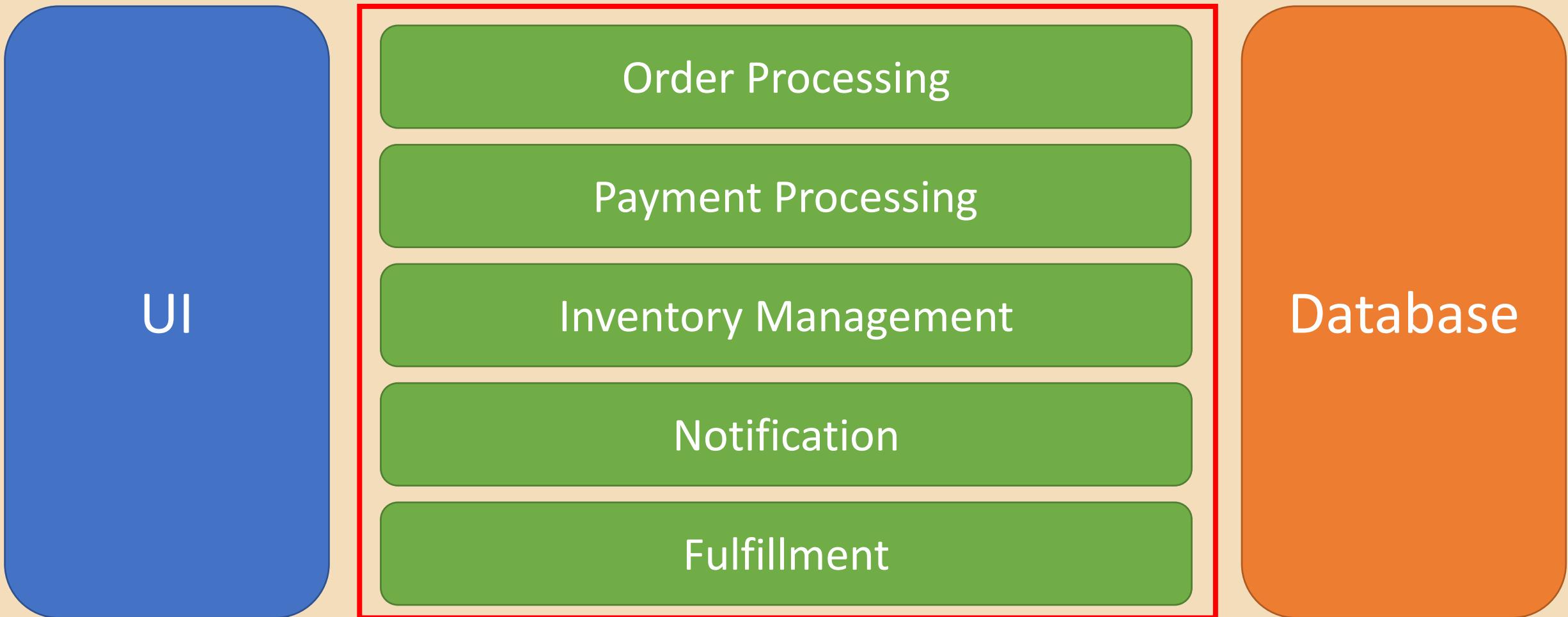


PREAMBLE



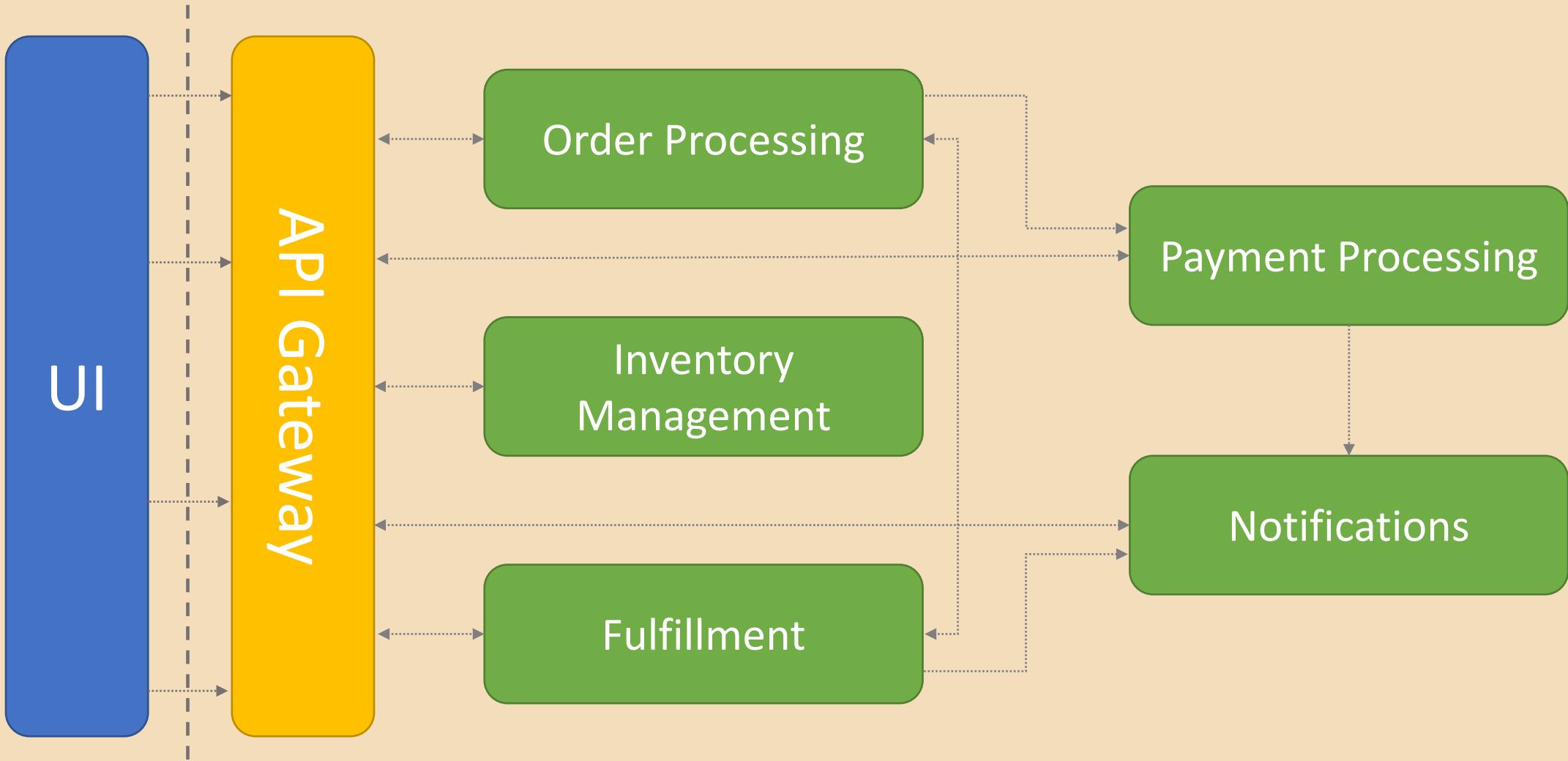
Monolith

Enterprise Architecture



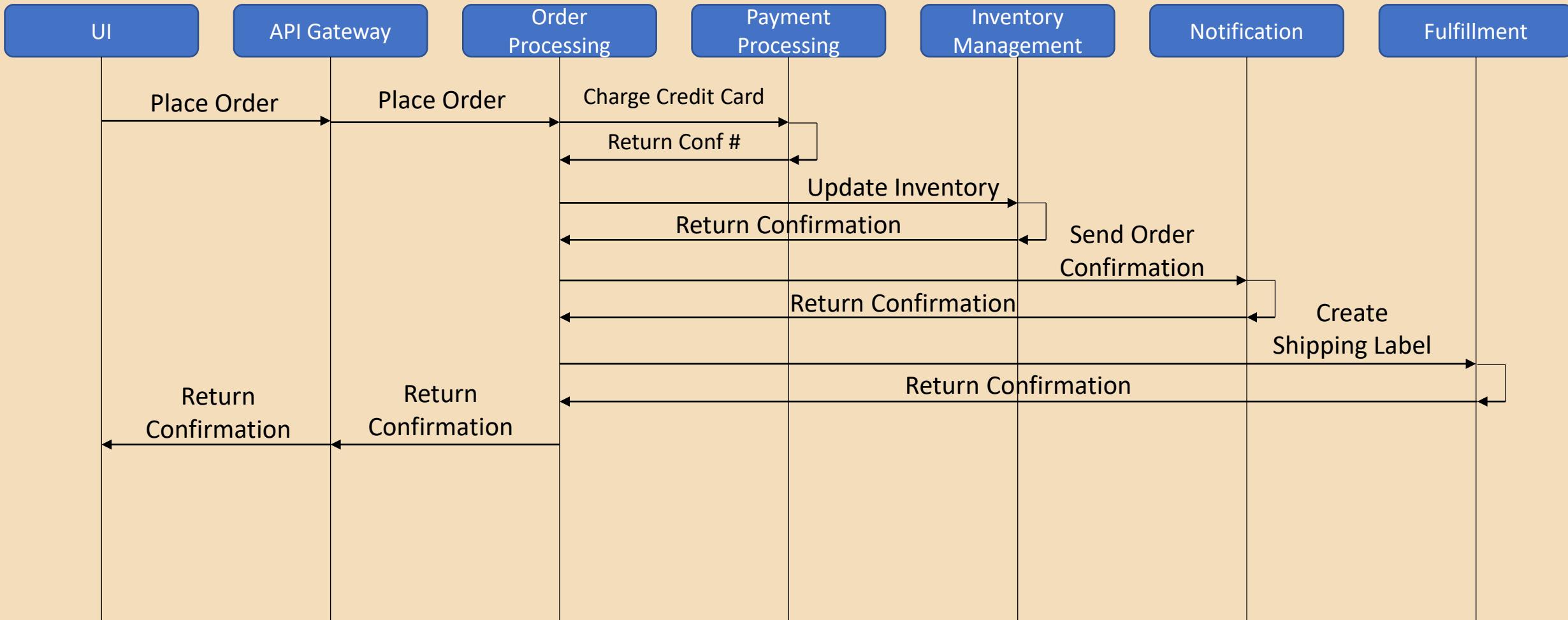
Microservices

Enterprise Architecture



Process Flow

Microservices



EVENT-DRIVEN ARCHITECTURE



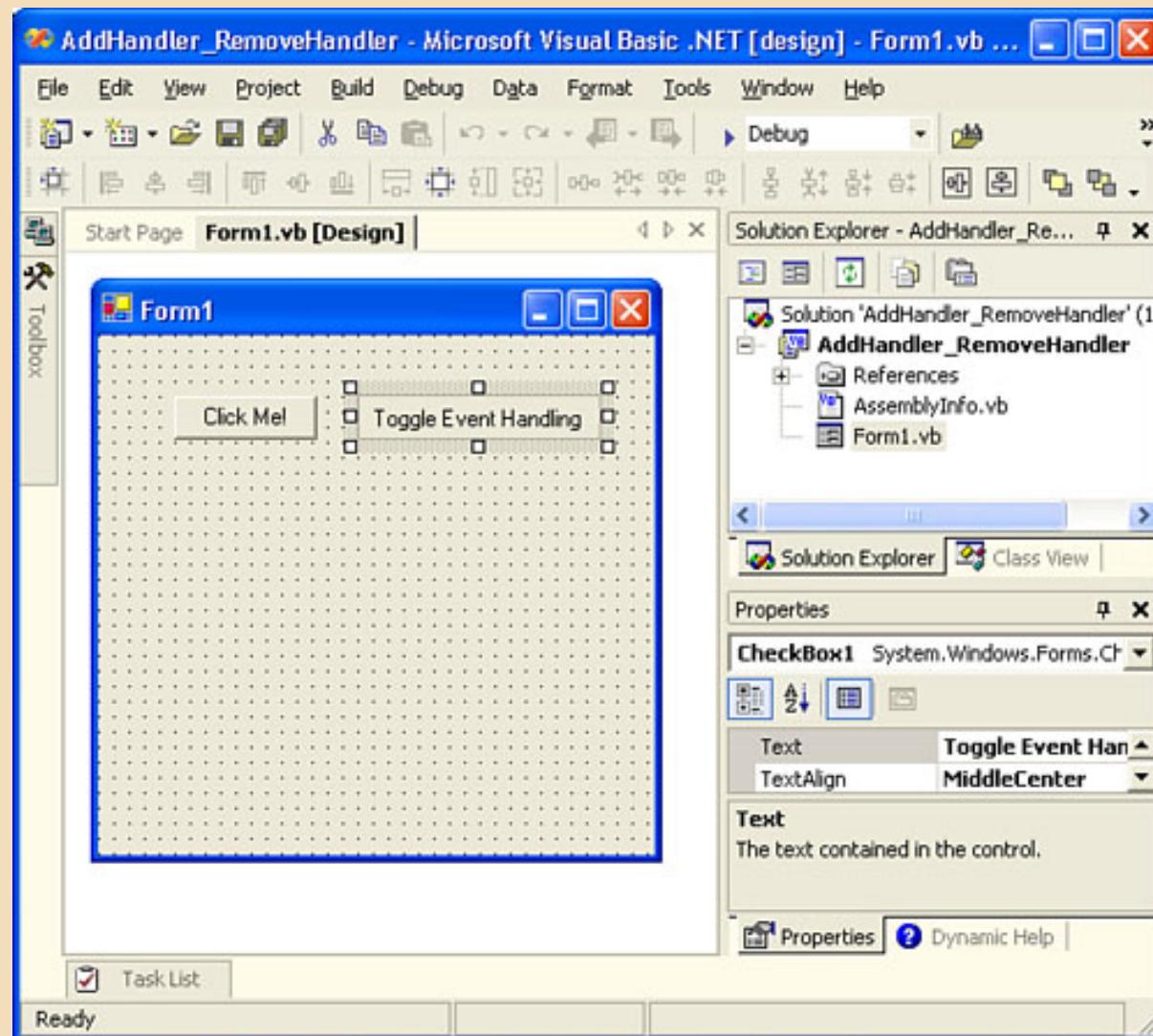
Event-Driven Architecture

“

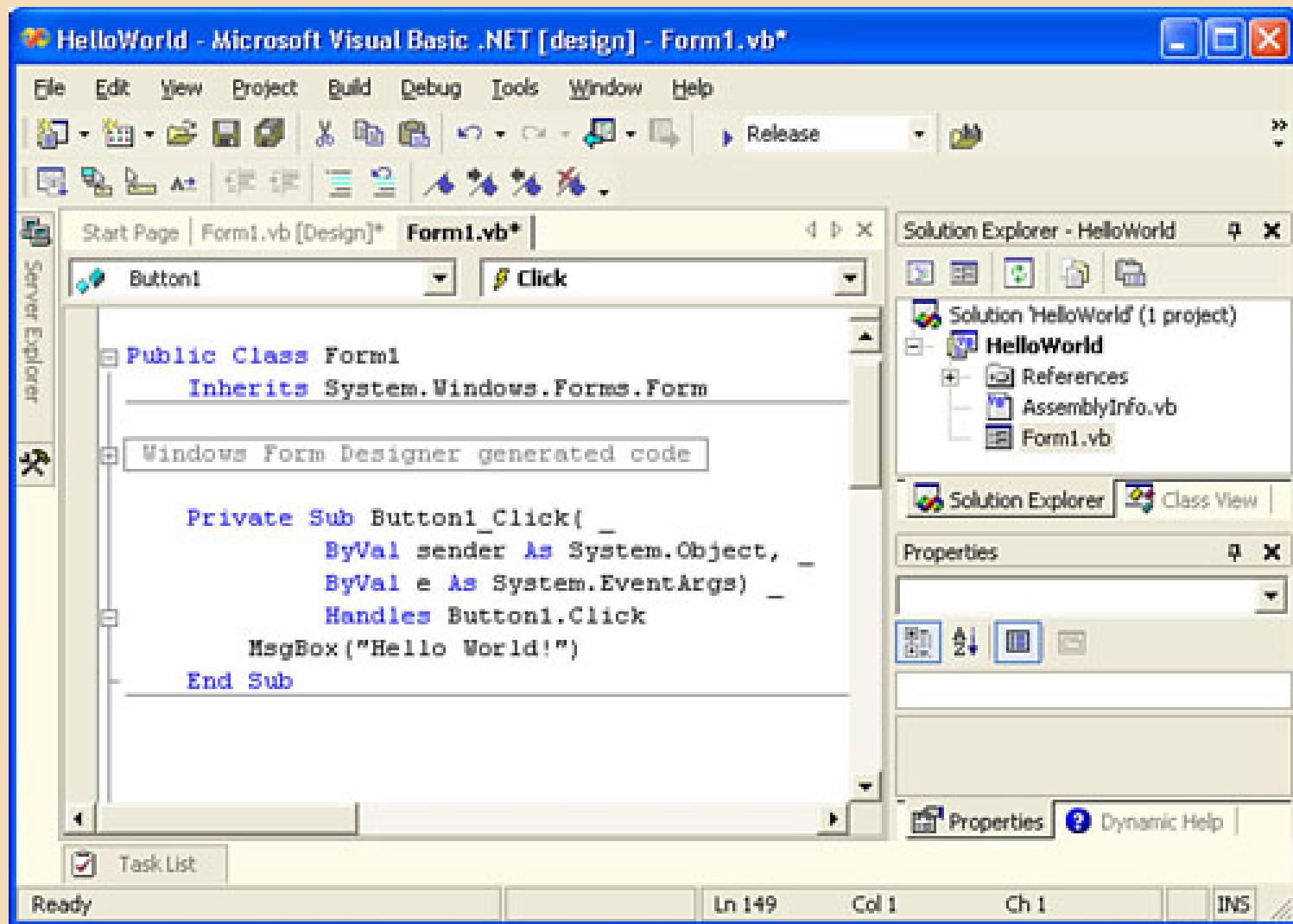
A software architecture pattern
promoting the production, detection,
consumption of, and reaction to **events**.

- Wikipedia -

Event-Driven Architecture



Event-Driven Architecture



Event-Driven Architecture

“

Event-driven architecture (EDA) is a design paradigm in which a software component executes in response to receiving one or more event notifications.

EDA is more loosely coupled than client/server paradigm because the component that sends the notification doesn't know the identity of the receiving components at the time of compiling

- Garner -

Event-Driven Architecture

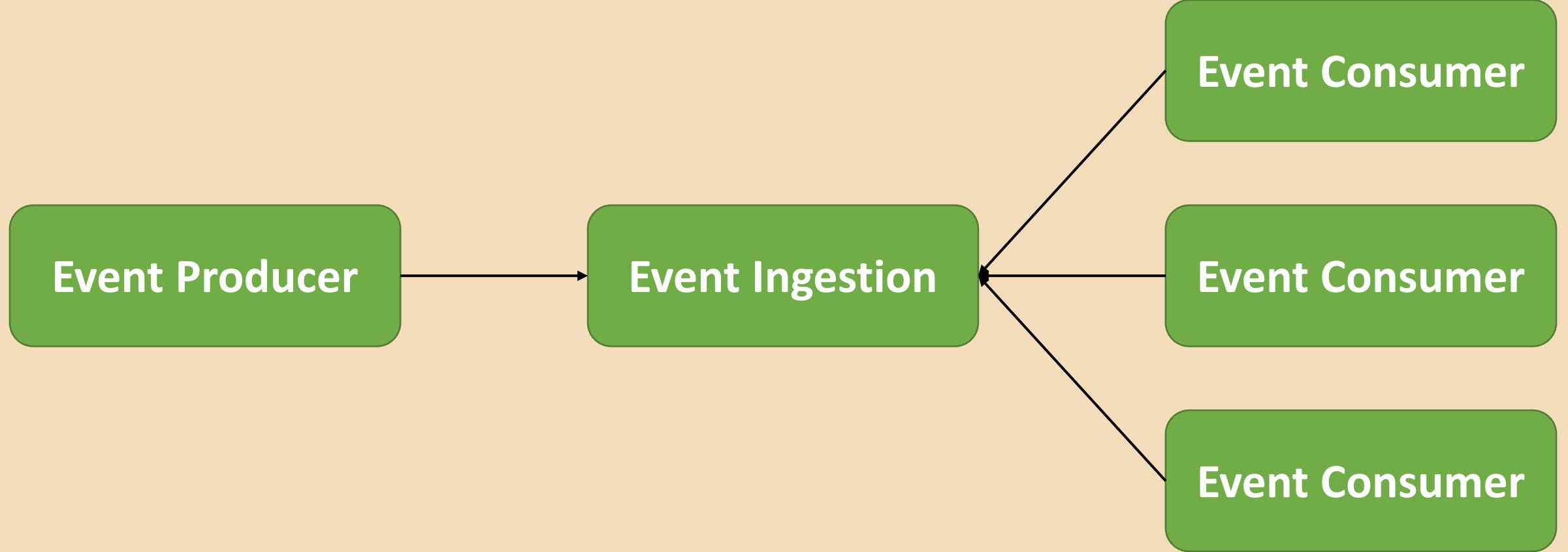
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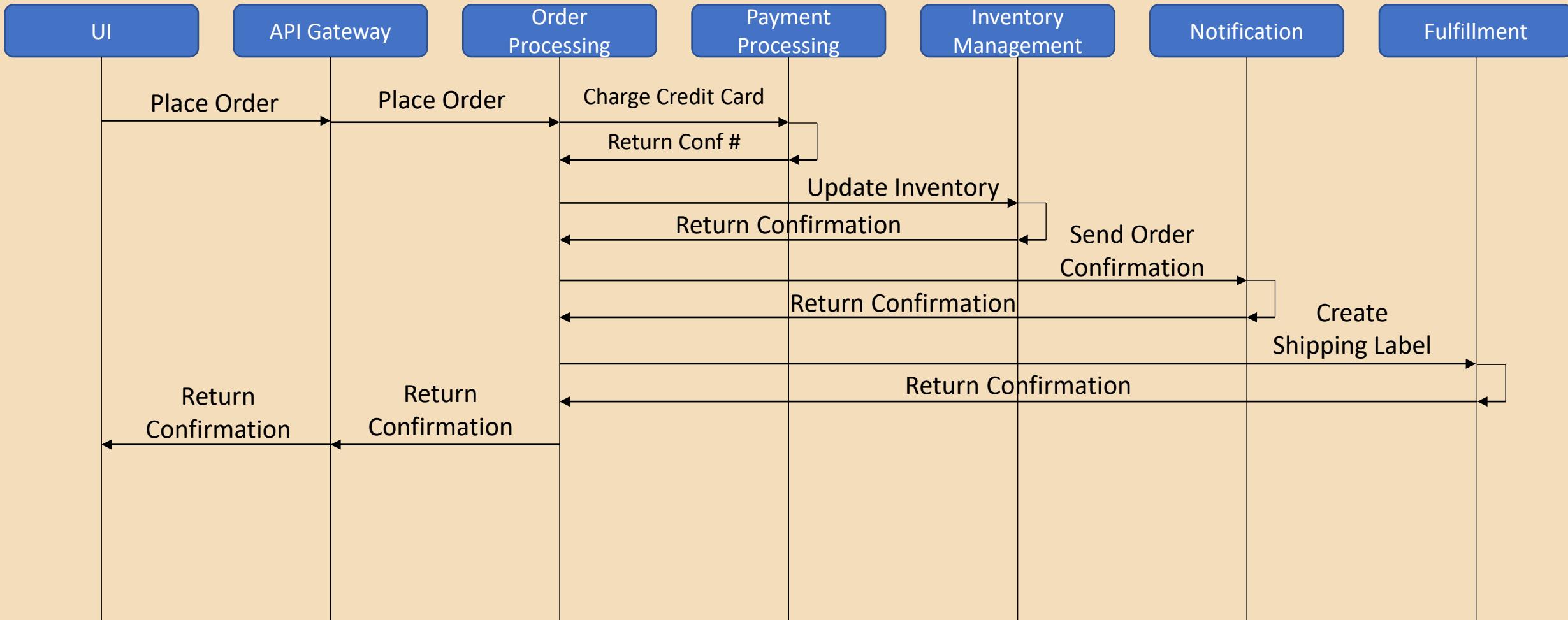
- Garner -

Event-Driven Architecture



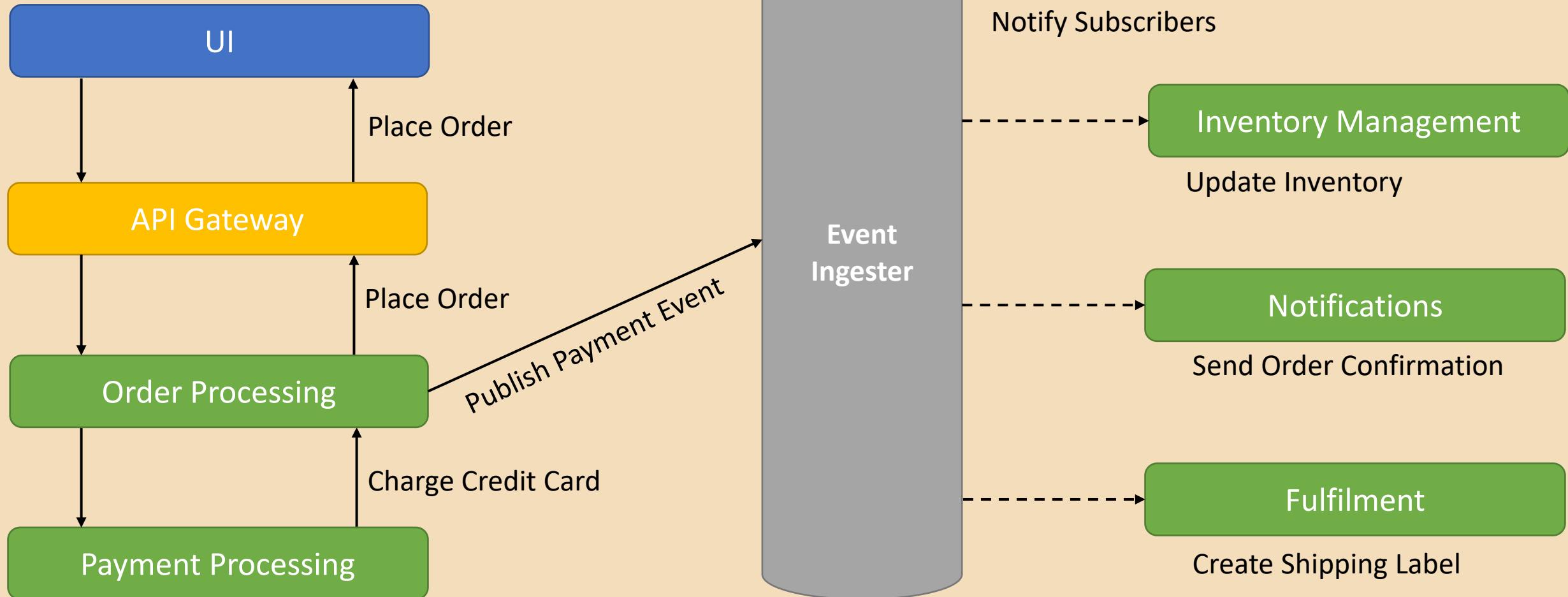
Process Flow

Microservices



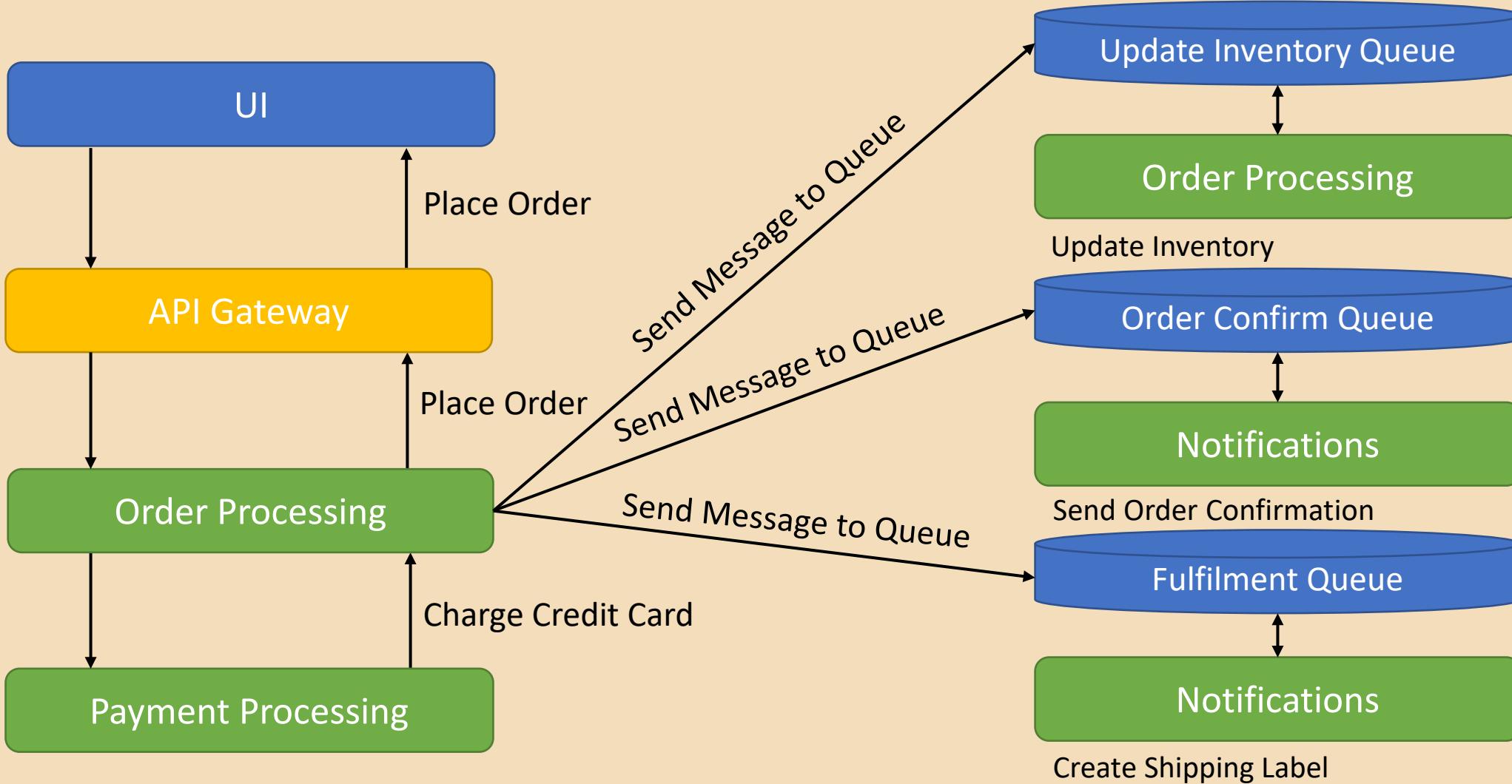
Process Flow

Event-Driven Architecture



Not Queue Based Processing

Event-Driven Architecture



Event Consumption Models

Event-Driven Architecture

Pub/Sub

Event Streaming

Event Consumer

Event Producer

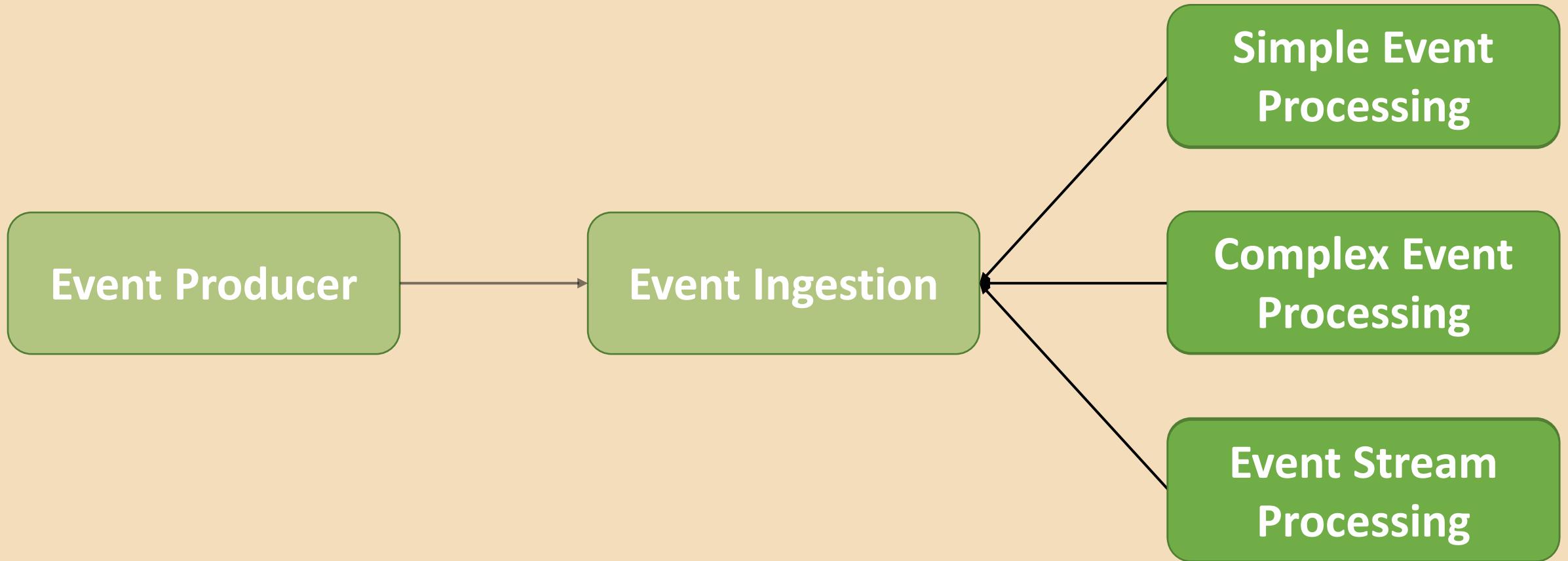
Event Ingestion

Event Consumer

Event Consumer

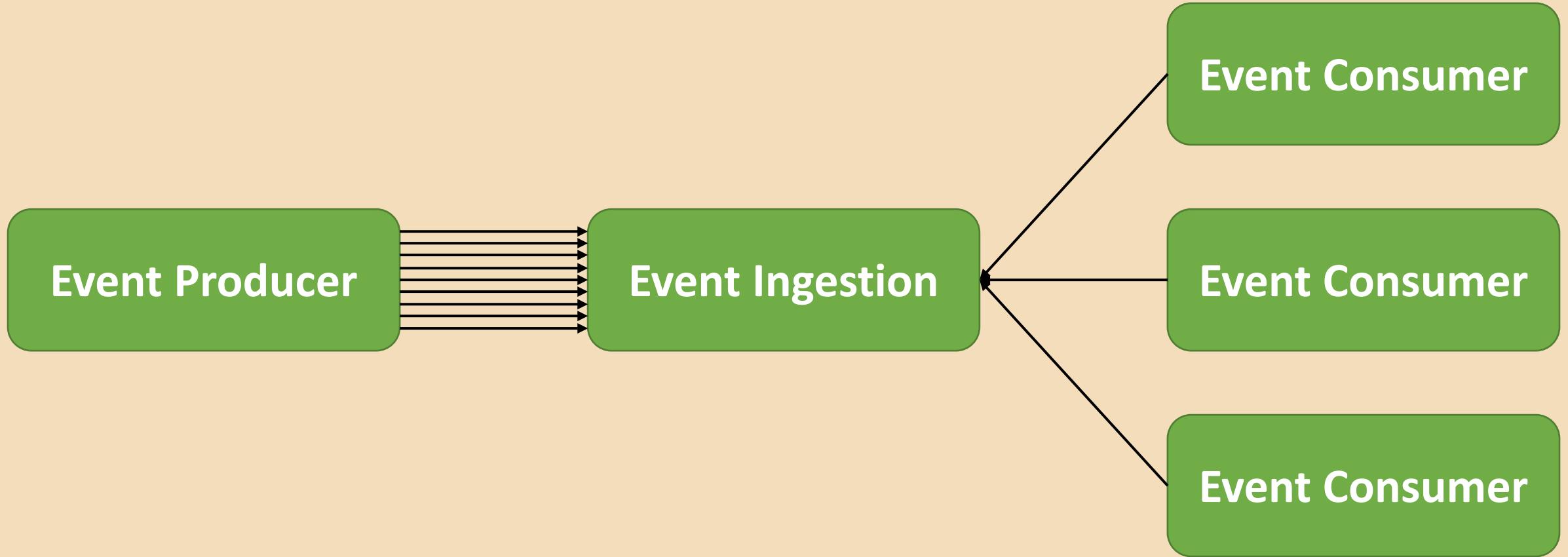
Consumer Processing Variations

Event-Driven Architecture



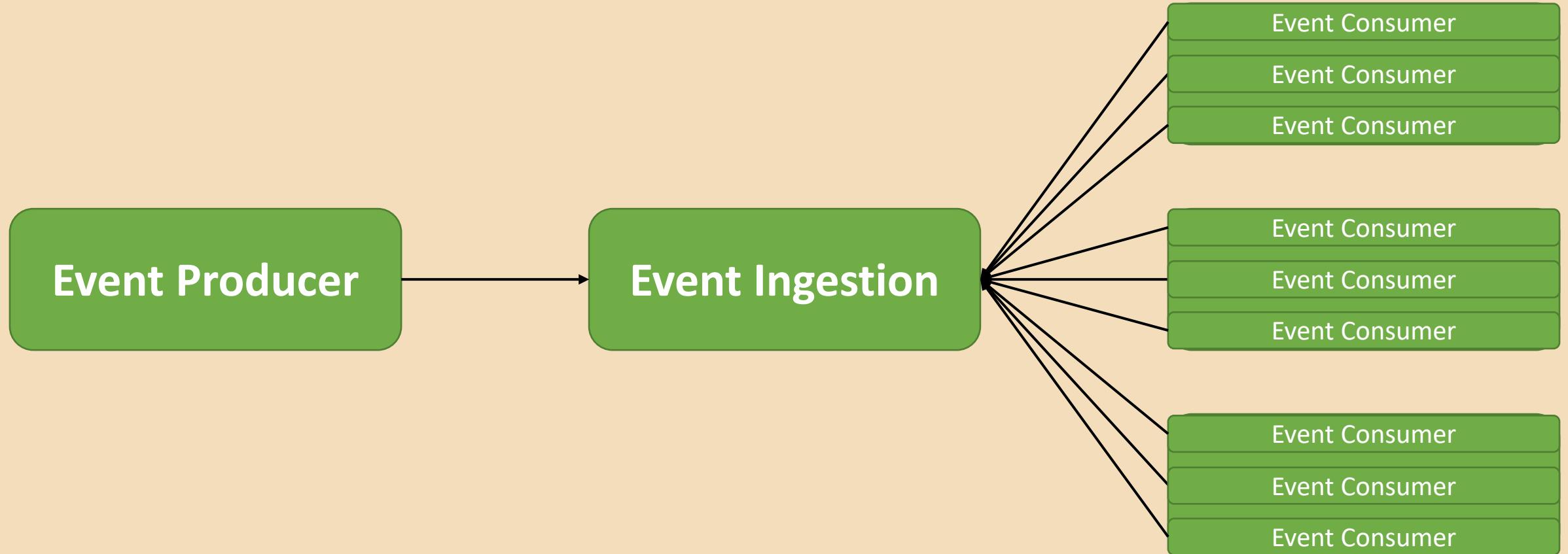
External Event Sources

Event-Driven Architecture



Multiple Consumer Instances

Event-Driven Architecture



When to use this architecture

Event-Driven Architecture

Multiple Subsystems

Real-Time Processing

Complex Event
Processing

High Volume/Velocity
Data

Event-Driven Architecture

Decoupling



Encapsulation



Responsive



Scalable/Distributed



Independence



Drawbacks

Event-Driven Architecture

Steep Learning Curve



Complexity



Loss of Transactionality



Lineage



Limitations

Event-Driven Architecture

Guaranteed Delivery



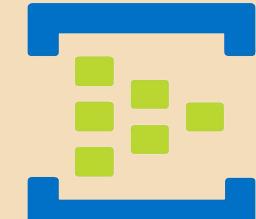
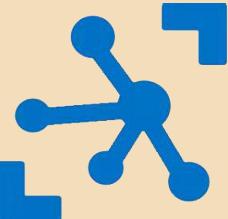
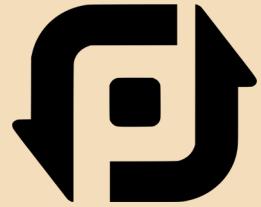
Sequencing



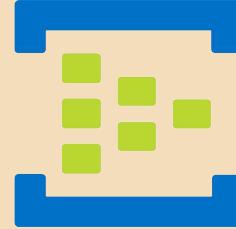
IMPLEMENTATION OPTIONS



Implementation Options

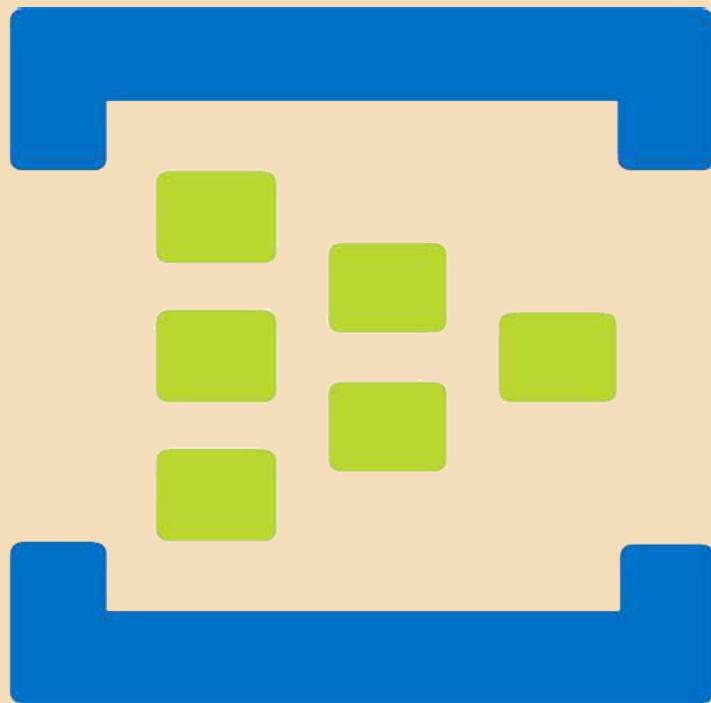


Implementation Options



Azure Event Hubs

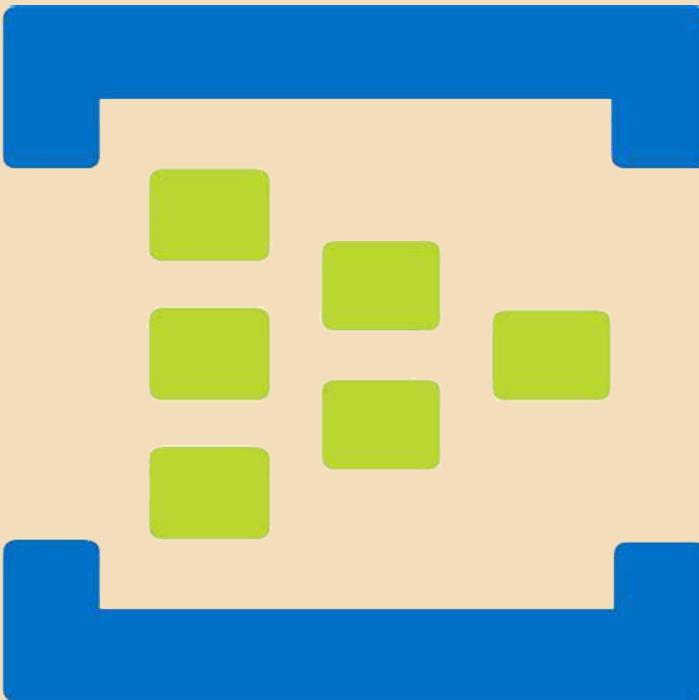
Simple, secure, and scalable real-time data ingestion



Fully managed, real-time data ingestion service that is simple, trusted, and scalable

Why choose Event Hubs?

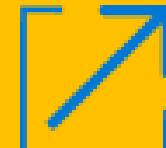
Azure Event Hubs



Simple



Secure



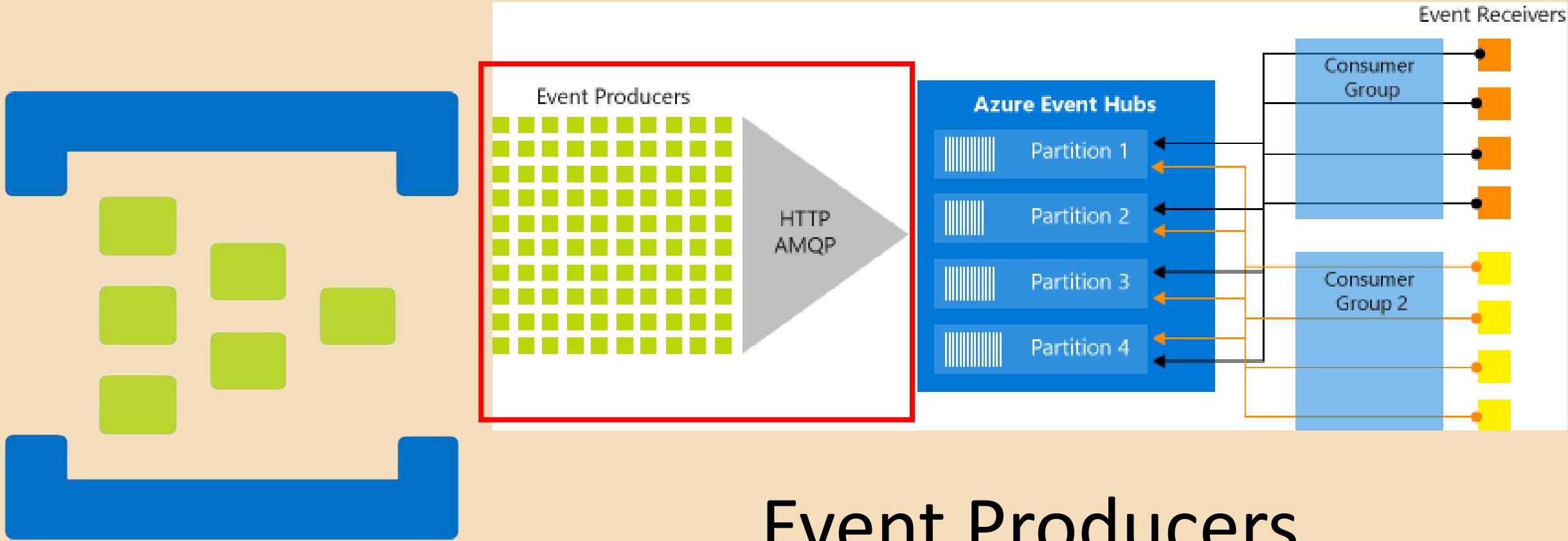
Scalable



Open

Key Architecture Components

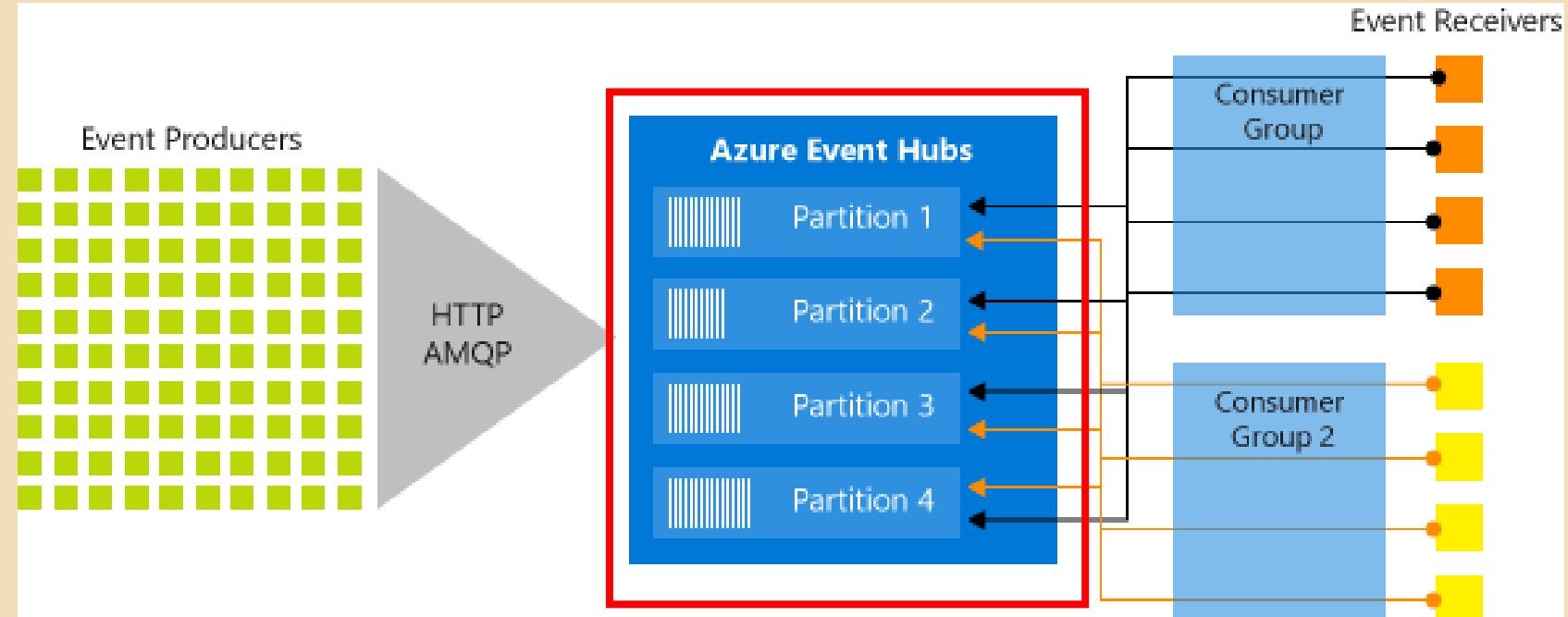
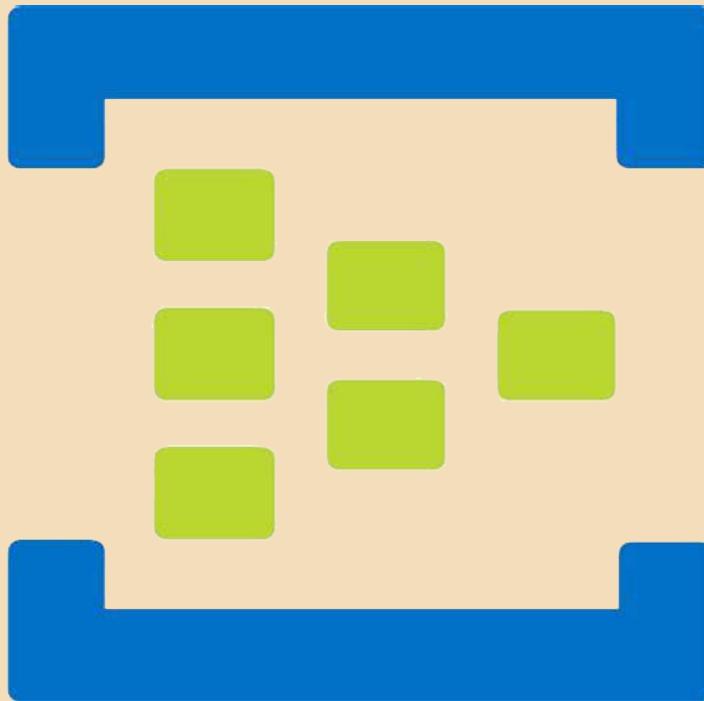
Azure Event Hubs



Event Producers

Key Architecture Components

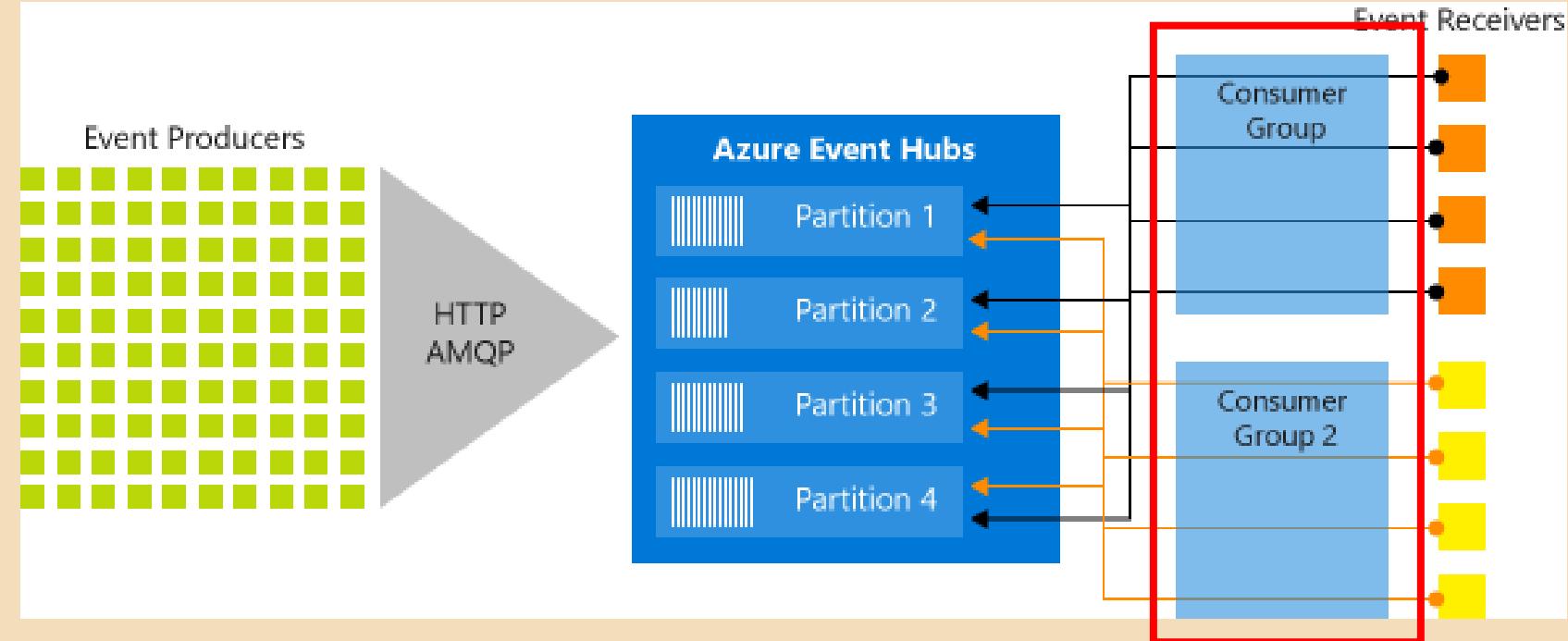
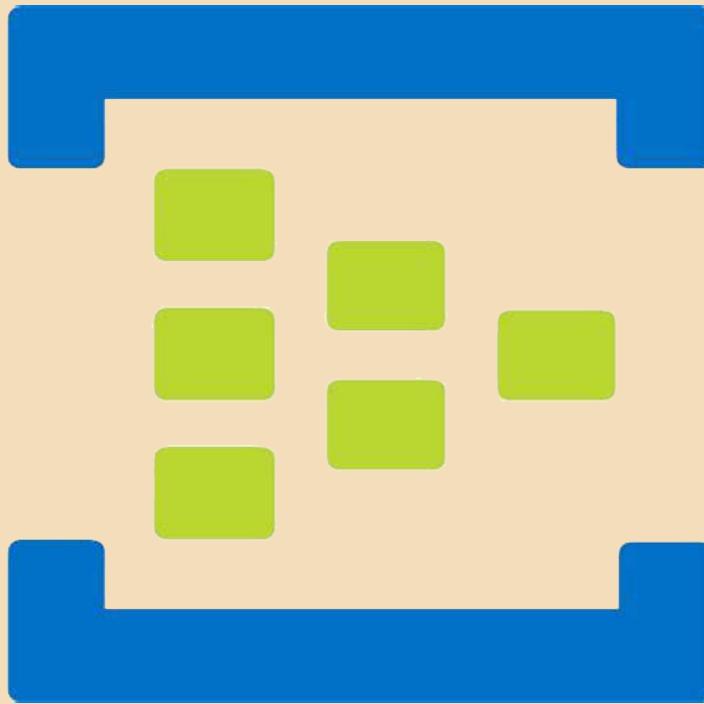
Azure Event Hubs



Partitions

Key Architecture Components

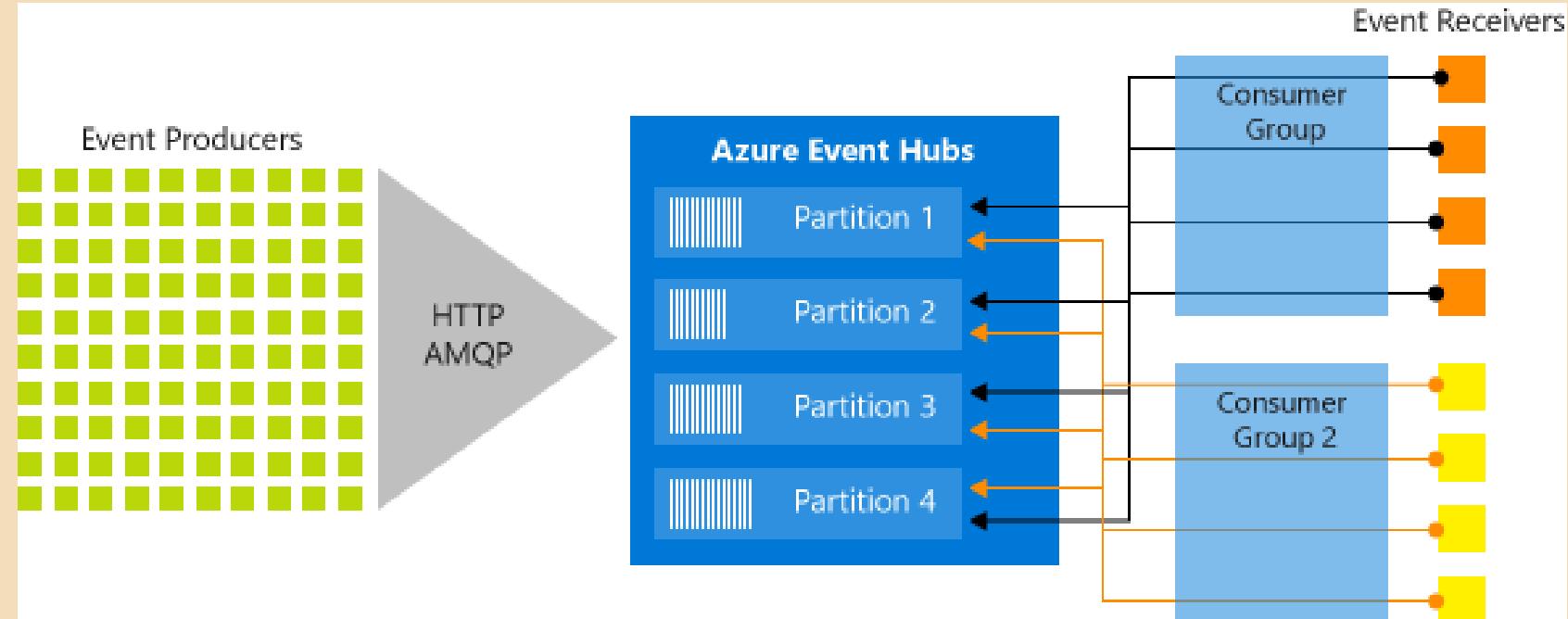
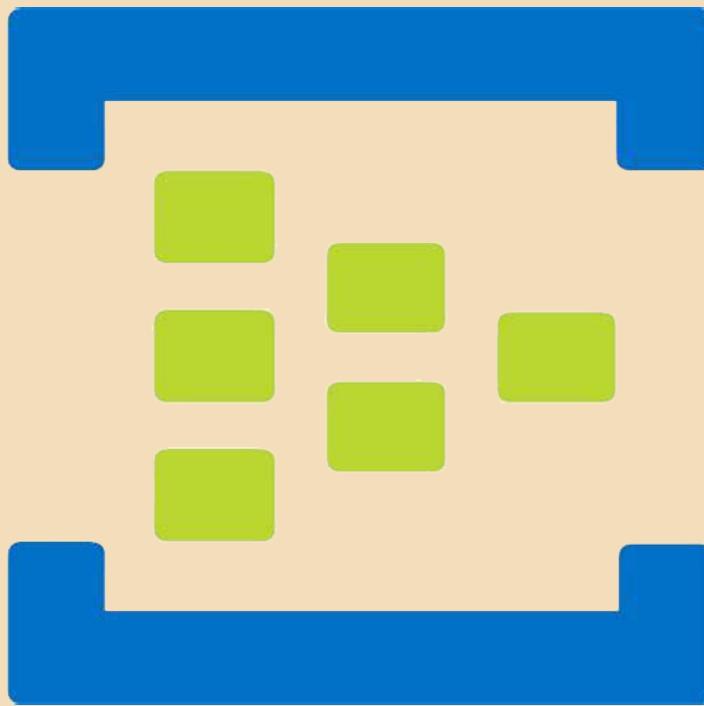
Azure Event Hubs



Consumer Groups

Key Architecture Components

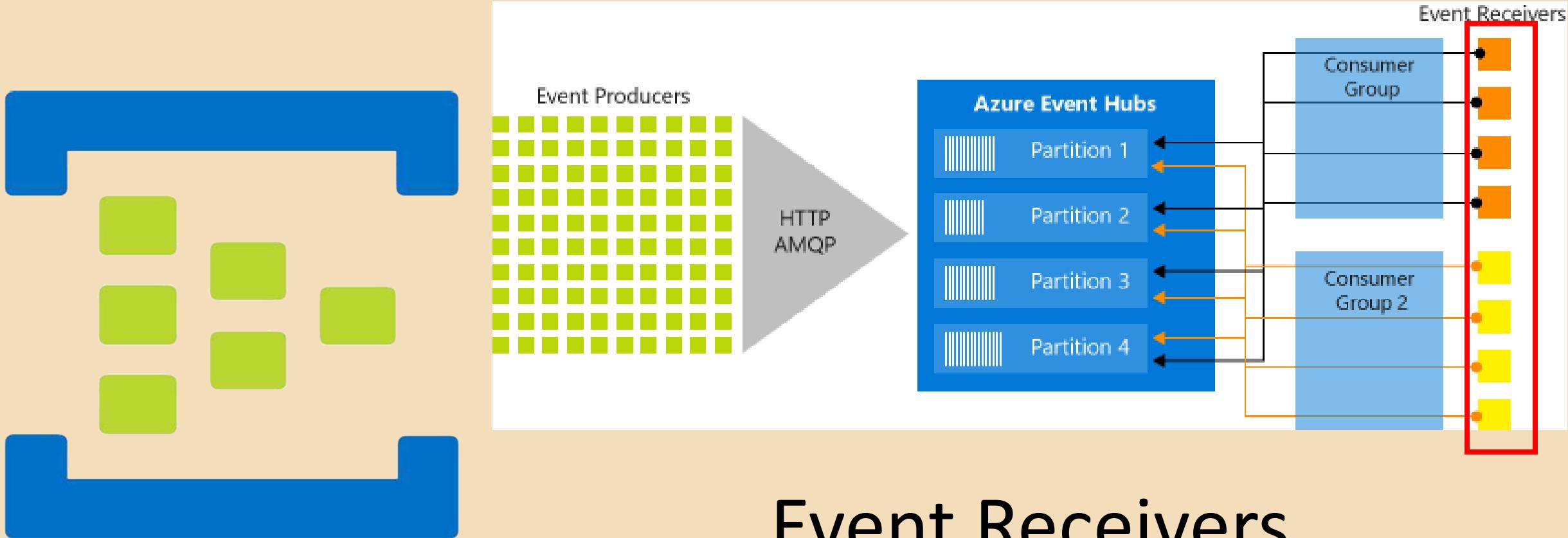
Azure Event Hubs



Throughput Units

Key Architecture Components

Azure Event Hubs



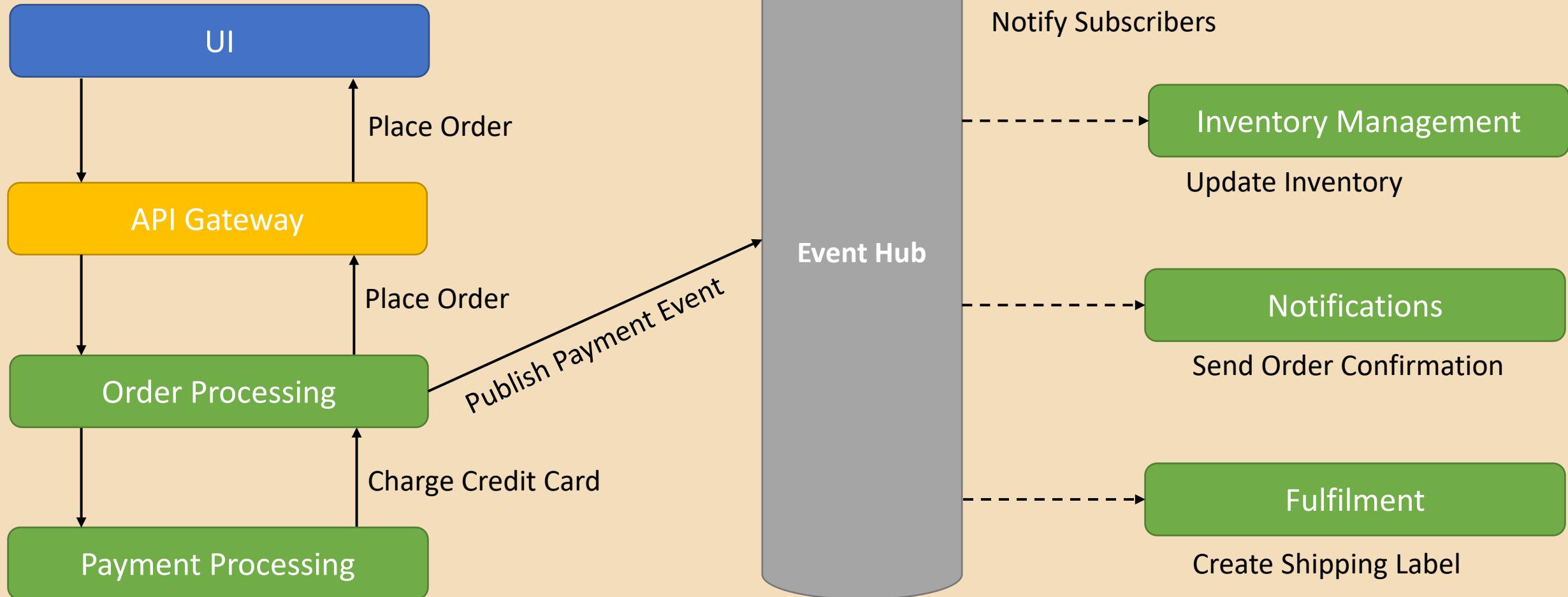
Event Receivers

A man with grey hair and a beard, wearing a blue pinstripe suit and dark sunglasses, is leaning over a red car, looking down at its open hood. He appears to be inspecting or working on the engine. The background shows a blurred outdoor setting with trees and a building.

DEMONSTRATION

Scenario

Demonstration



SUMMARY



Event-Driven Architecture

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- Garner -

SWOT

Summary

Strengths

- Decoupling
- Encapsulation
- Responsive
- Scalable /
Distributed
- Independence

SWOT

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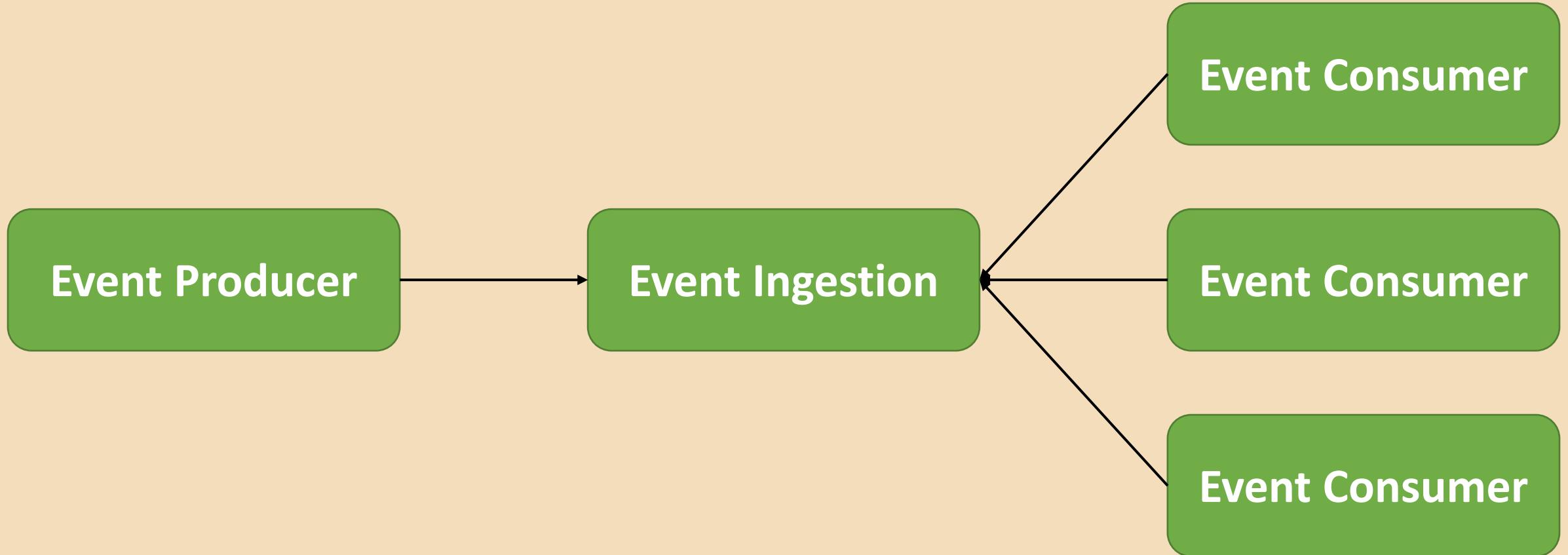
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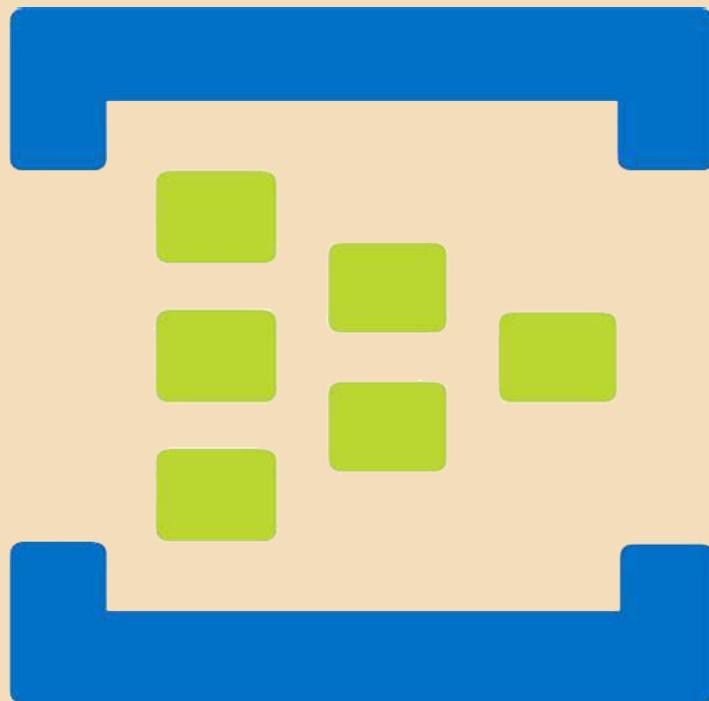
Event-Driven Architecture

Summary



Azure Event Hubs

Summary



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Simple | Secure | Scalable | Open

Thank You!

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