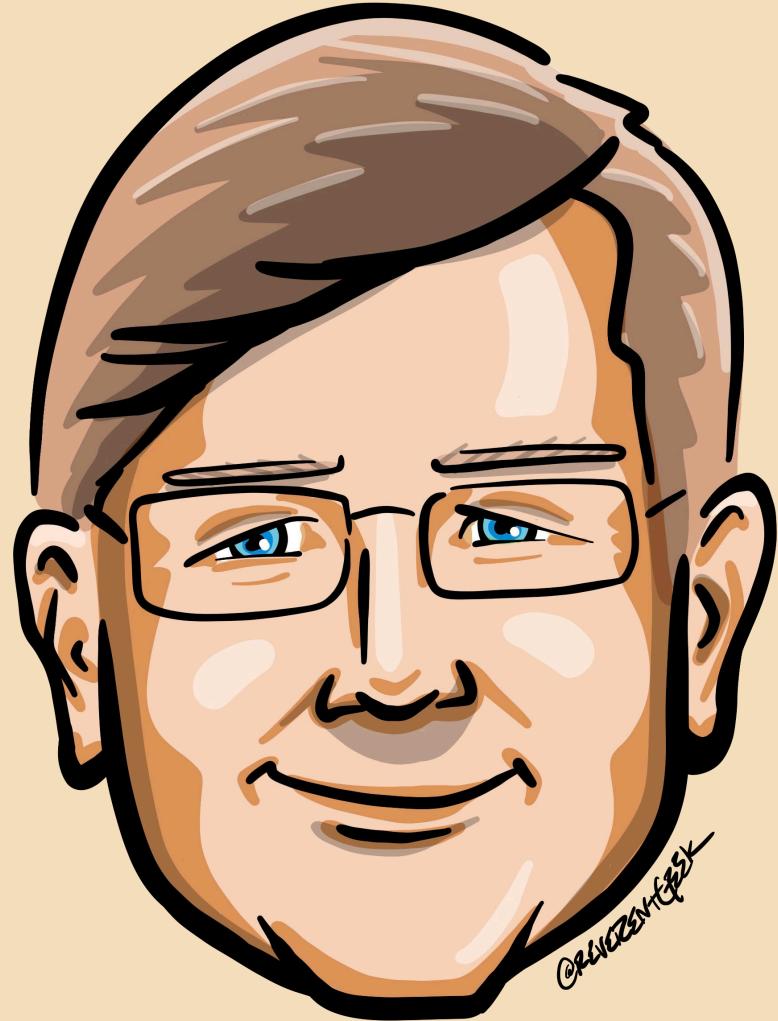




# EVENT-DRIVEN ARCHITECTURE IN THE CLOUD

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- 🐦 ChadGreen & TaleLearnCode
- linkedin ChadwickEGreen

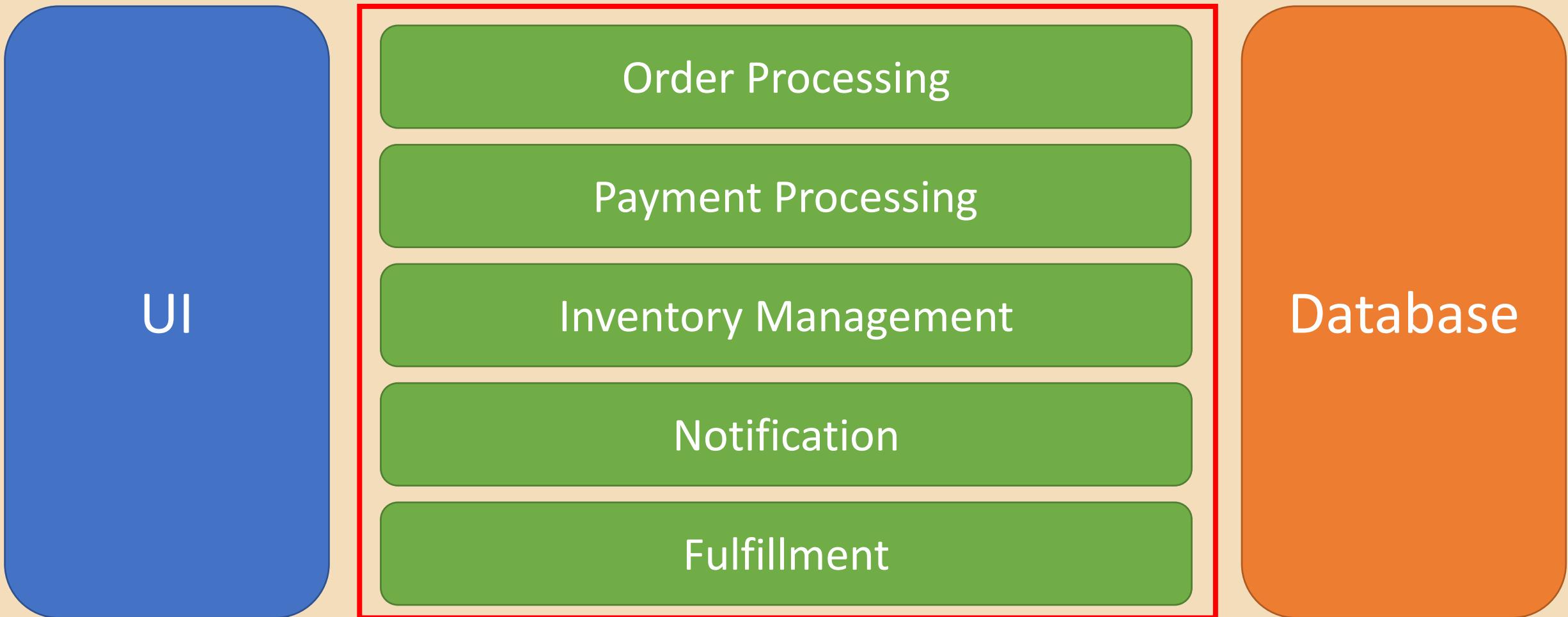


# PREAMBLE



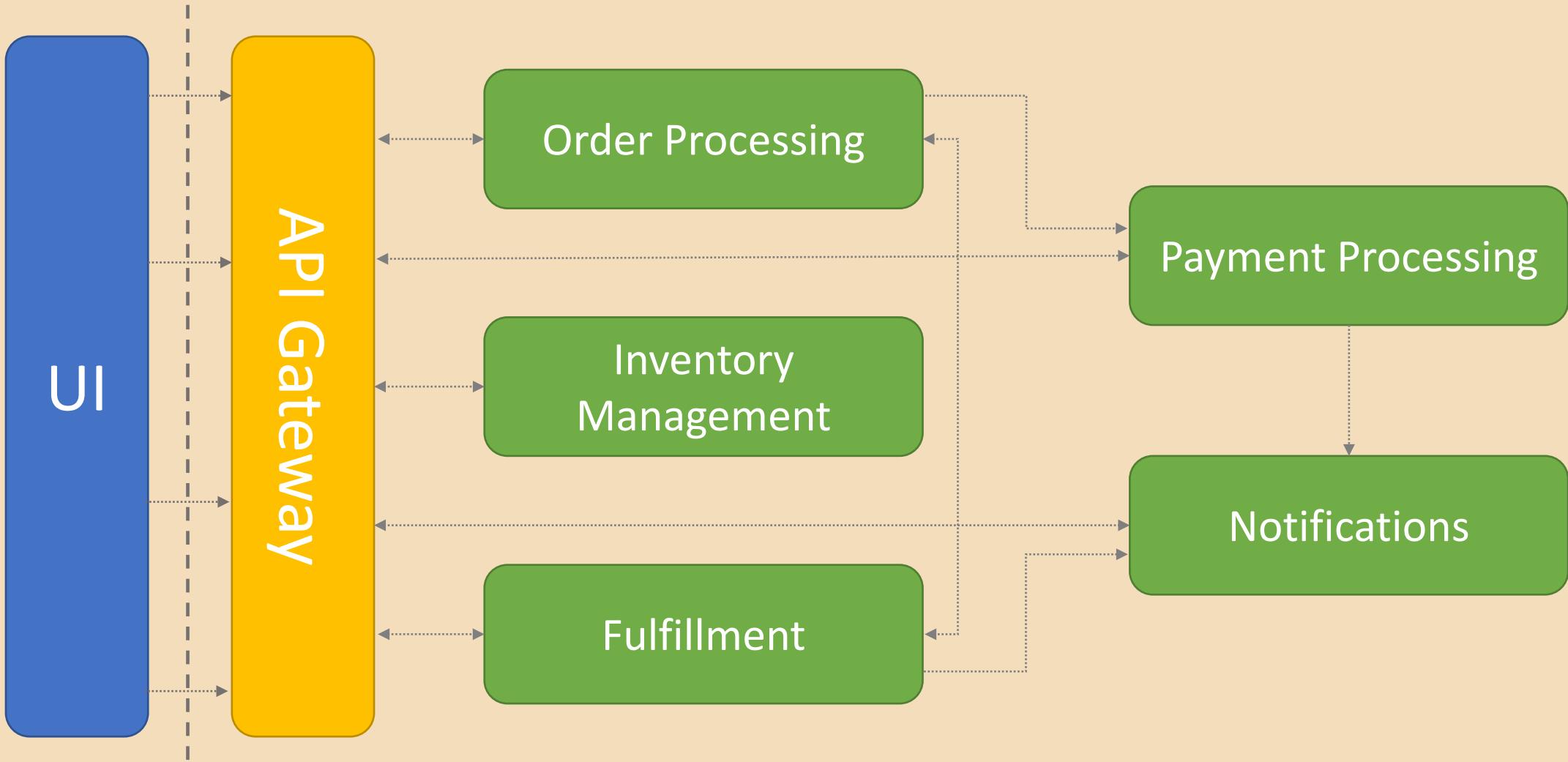
# Monolith

## Enterprise Architecture



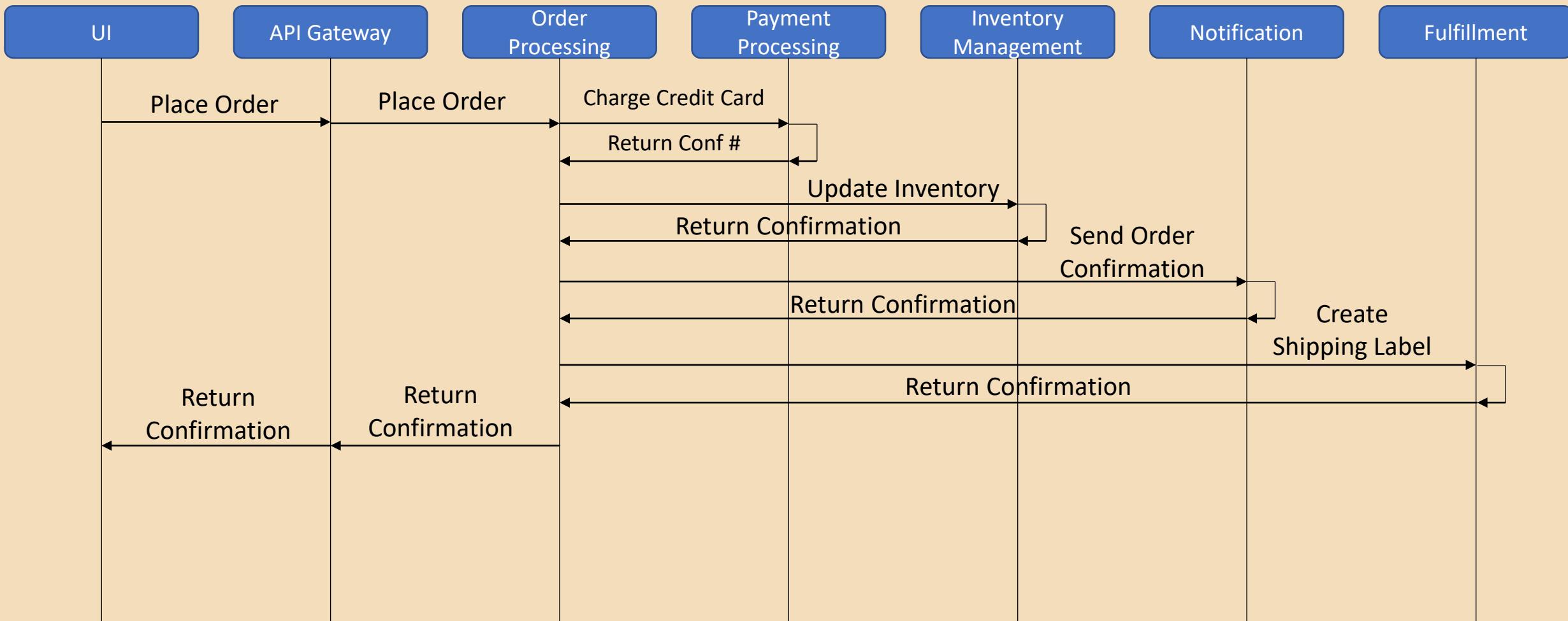
# Microservices

Enterprise Architecture



# Process Flow

## Microservices



# EVENT-DRIVEN ARCHITECTURE



# Event-Driven Architecture

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“

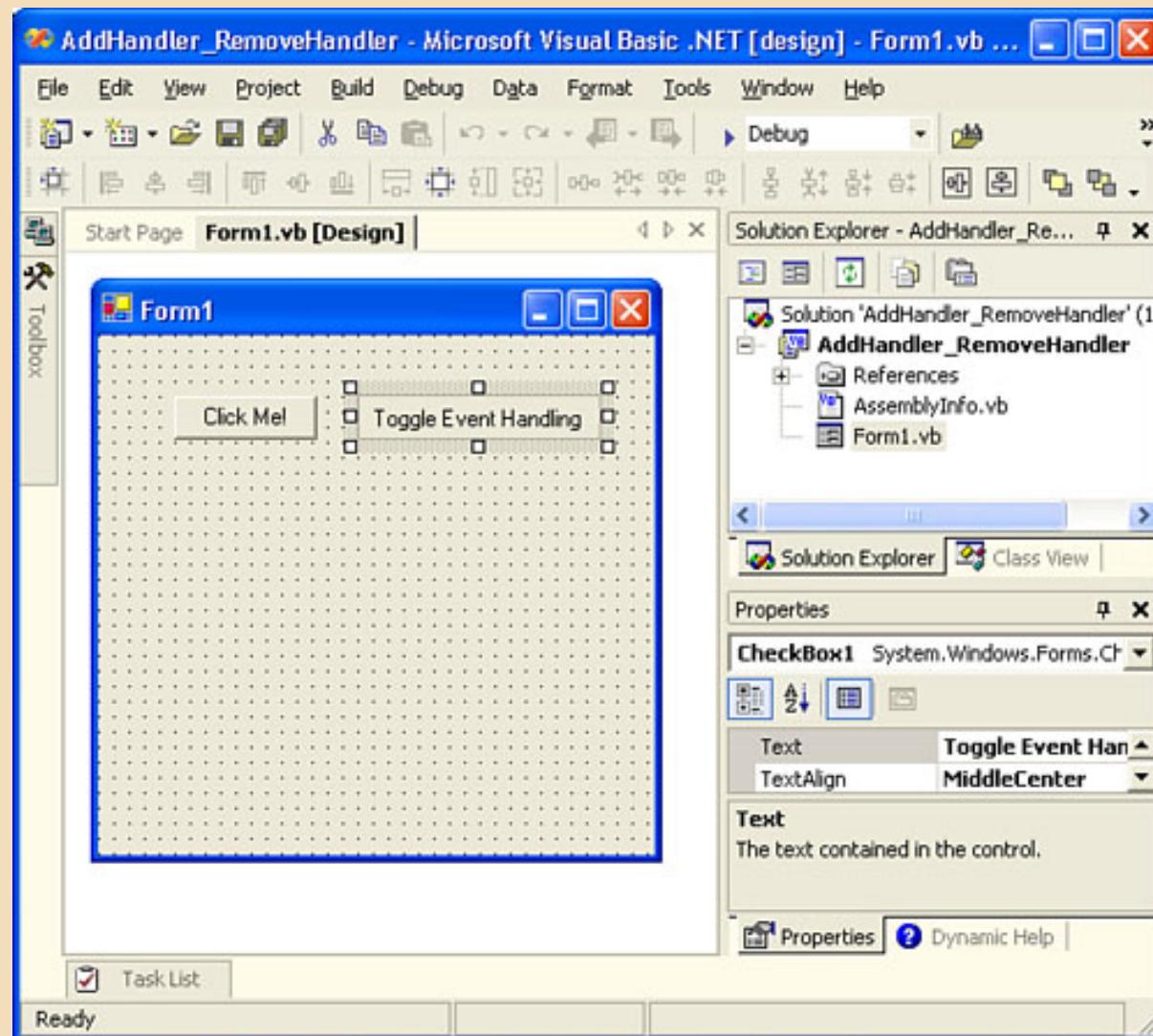
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A software architecture pattern  
promoting the production, detection,  
consumption of, and reaction to **events**.

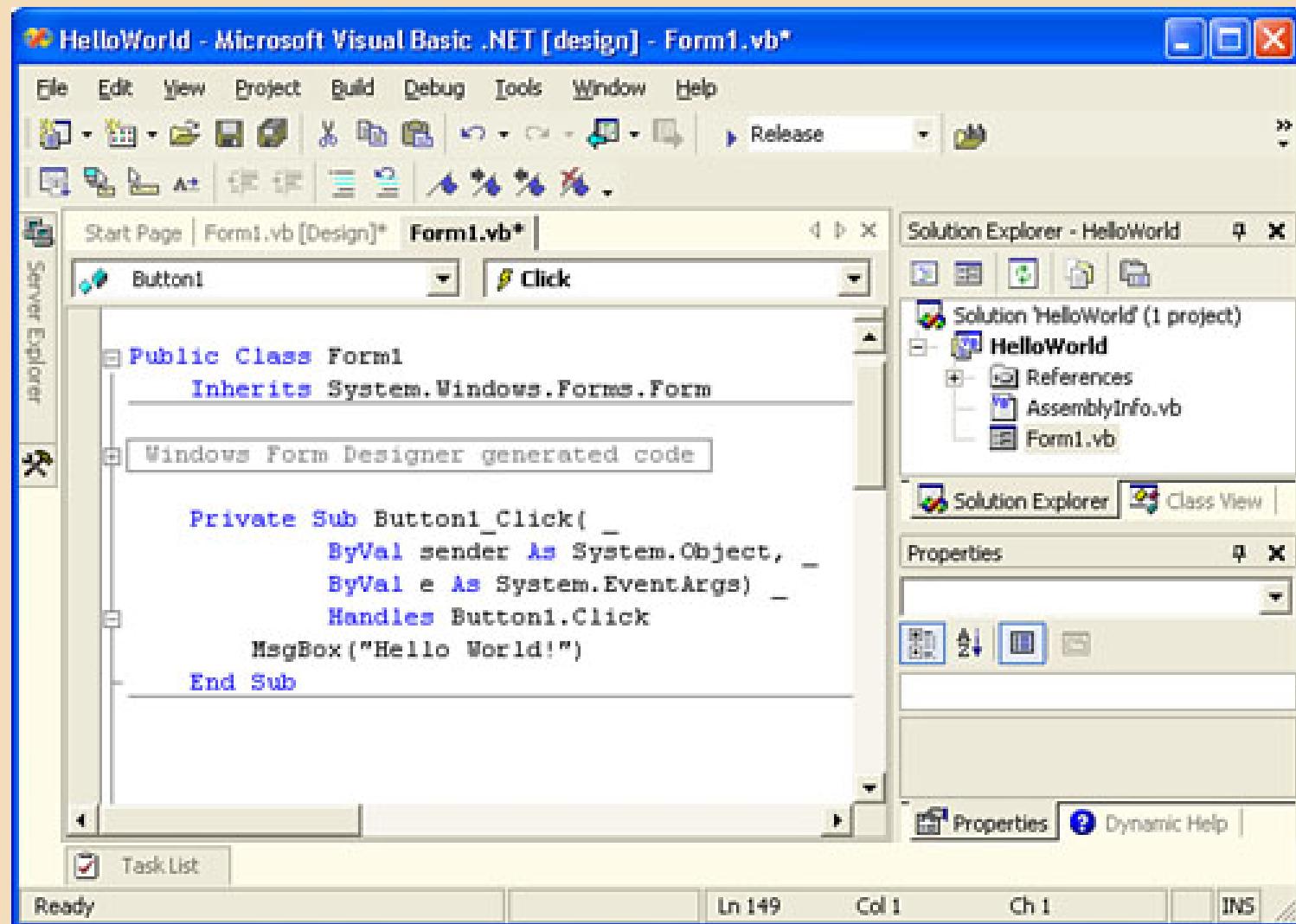
---

- 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

---

“

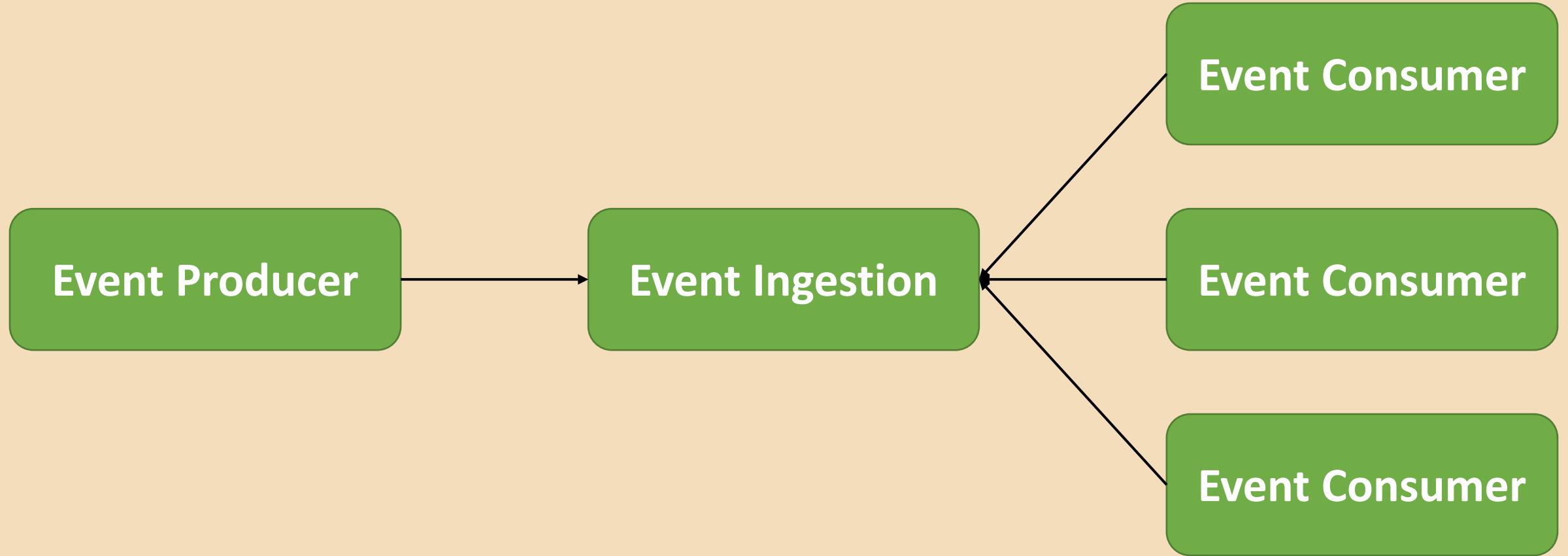
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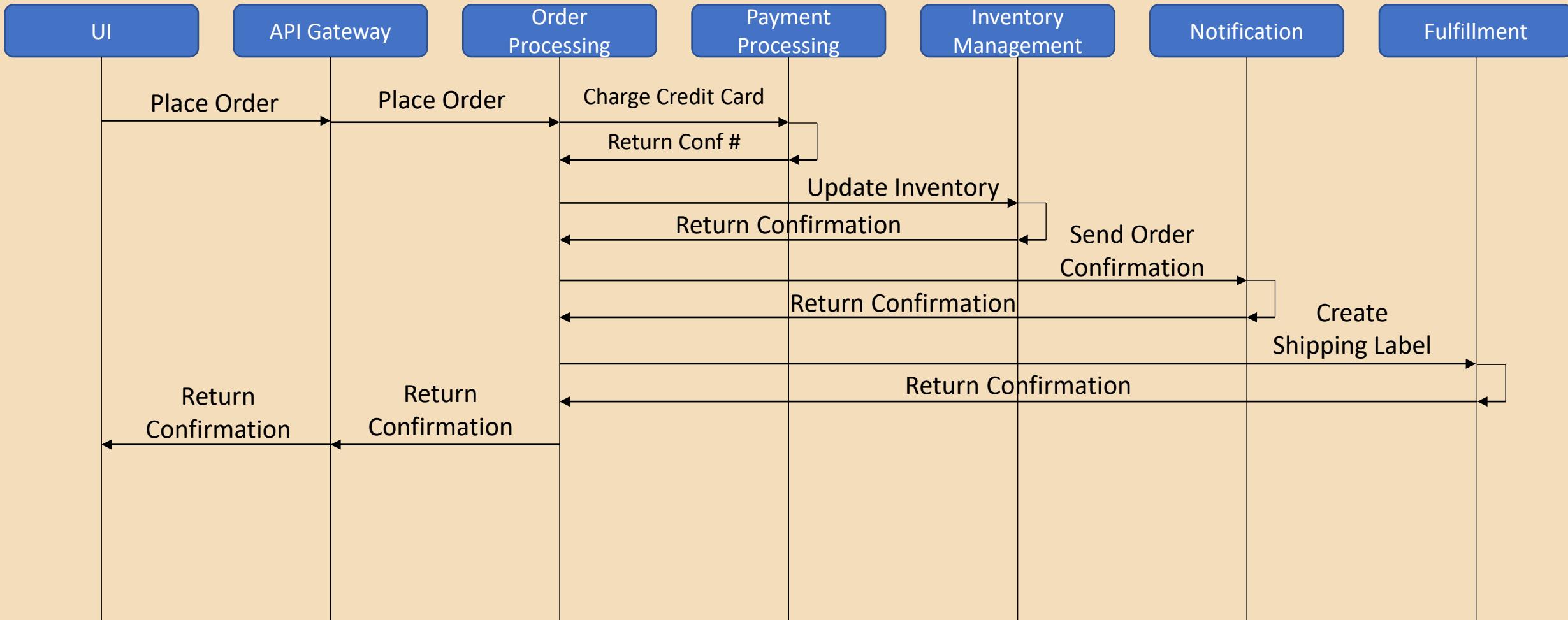
- Garner -

# Event-Driven Architecture



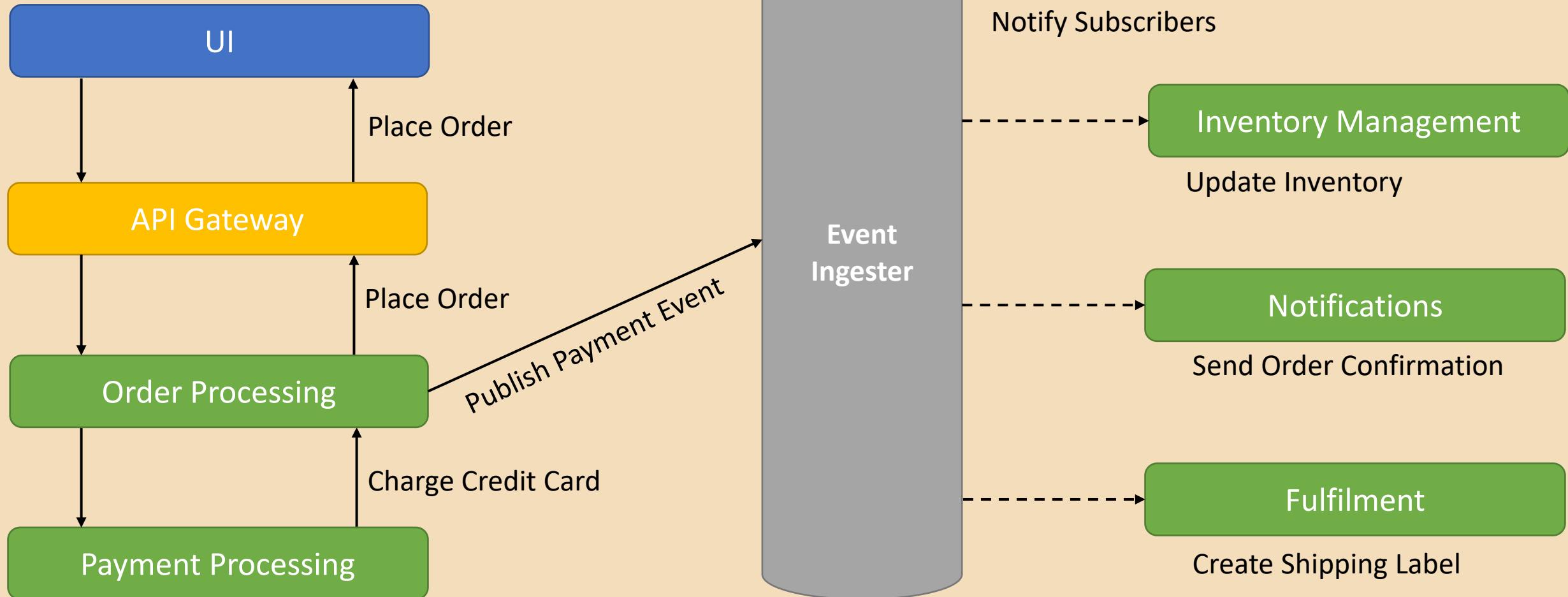
# Process Flow

## Microservices



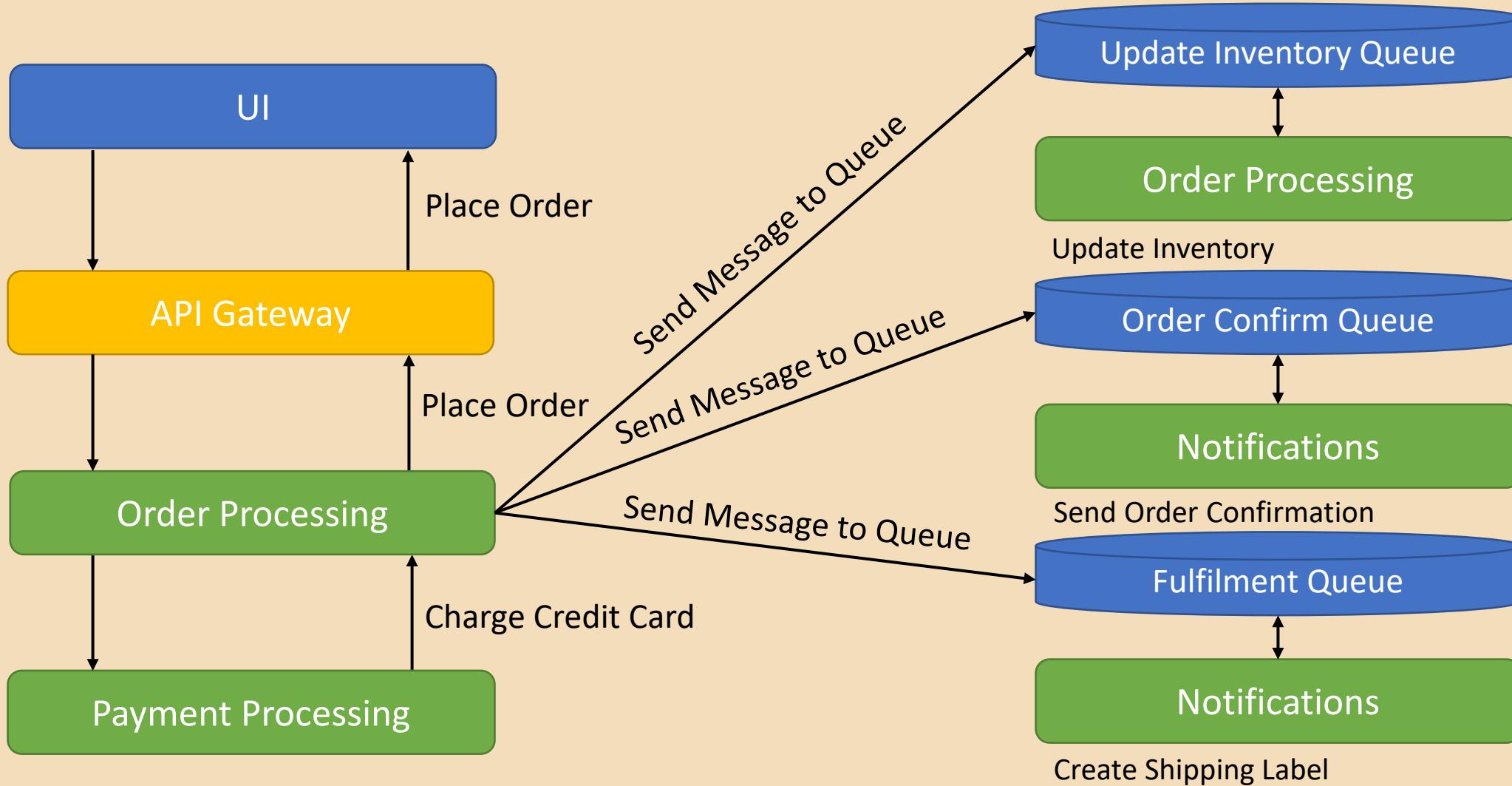
# Process Flow

## Event-Driven Architecture



# Not Queue Based Processing

## Event-Driven Architecture



# Event Consumption Models

Event-Driven Architecture

Pub/Sub

Event Streaming

Event Consumer

Event Producer

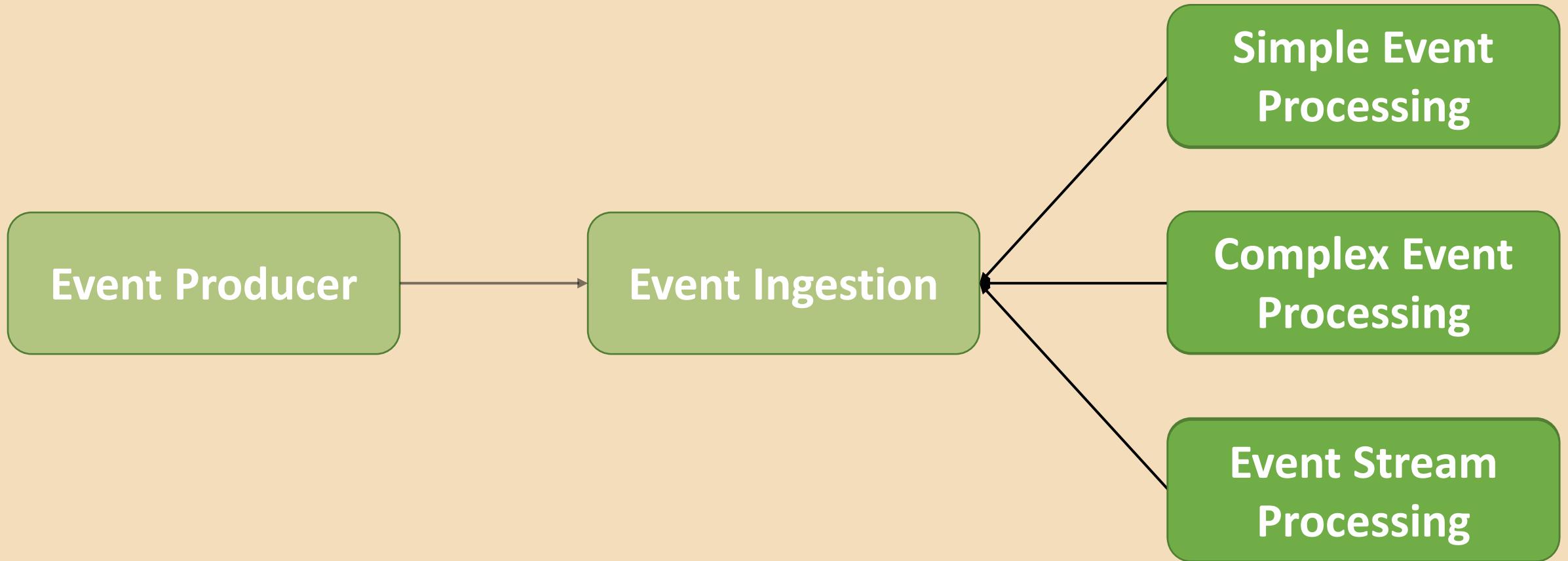
Event Ingestion

Event Consumer

Event Consumer

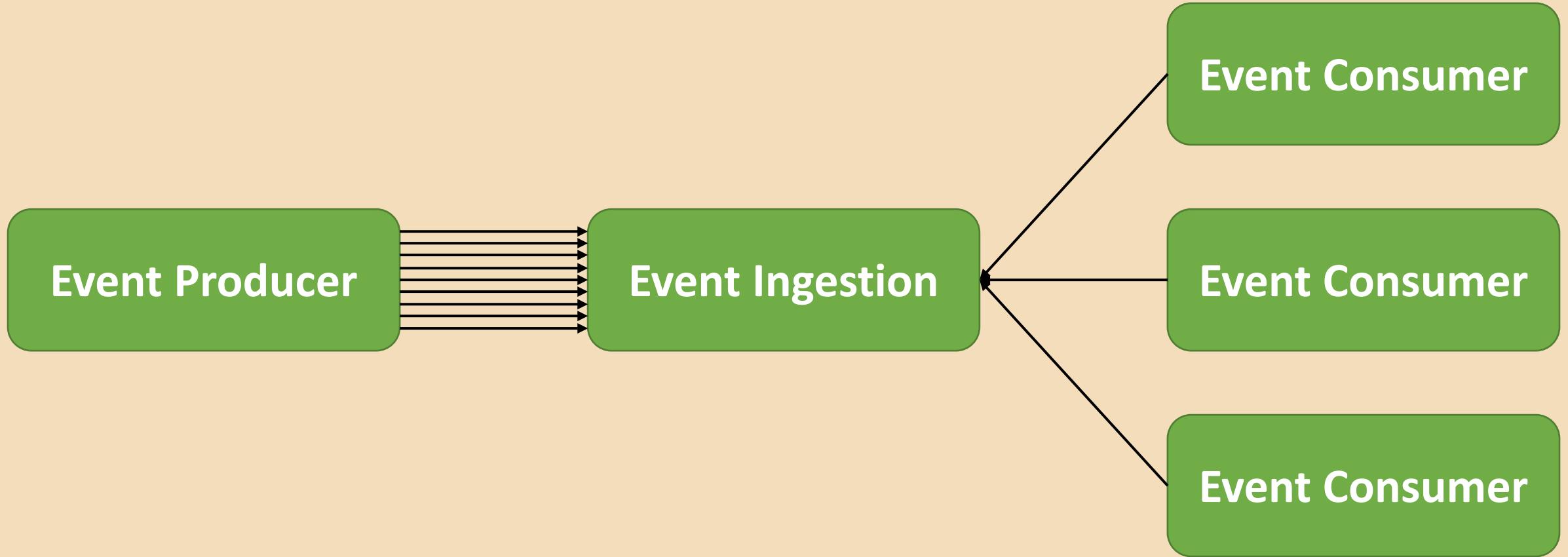
# Consumer Processing Variations

Event-Driven Architecture



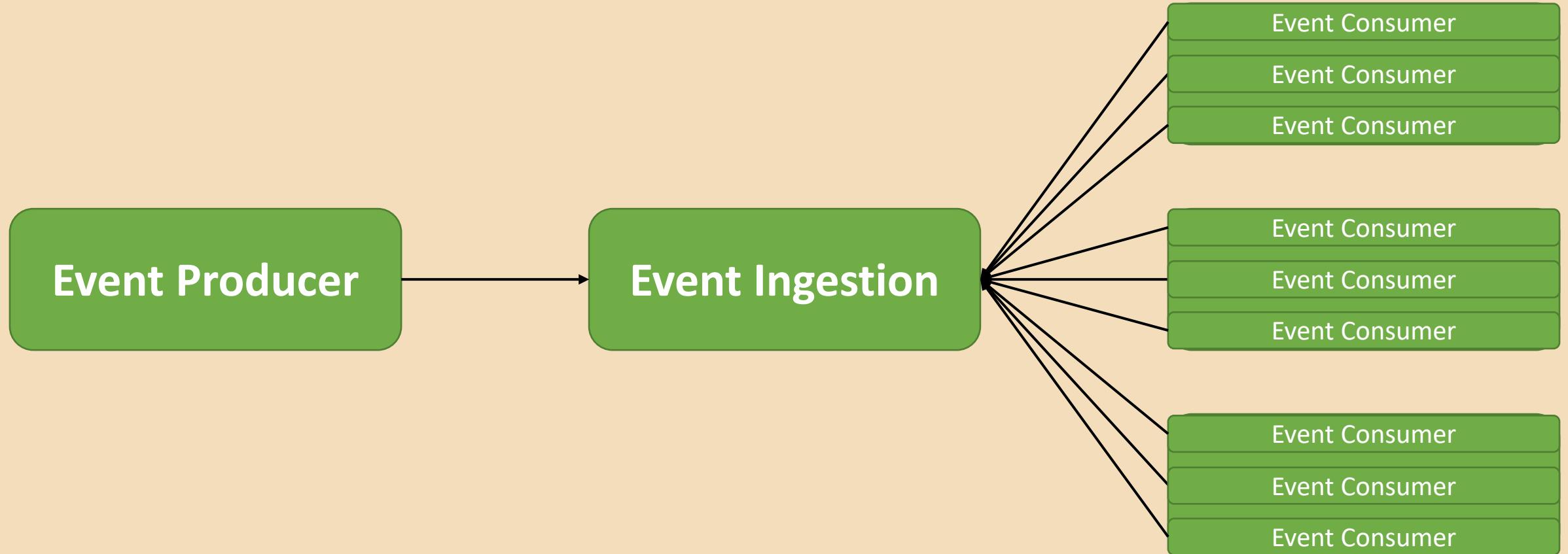
# External Event Sources

Event-Driven Architecture



# Multiple Consumer Instances

Event-Driven Architecture



# When to use this architecture

Event-Driven Architecture

Multiple Subsystems

Real-Time Processing

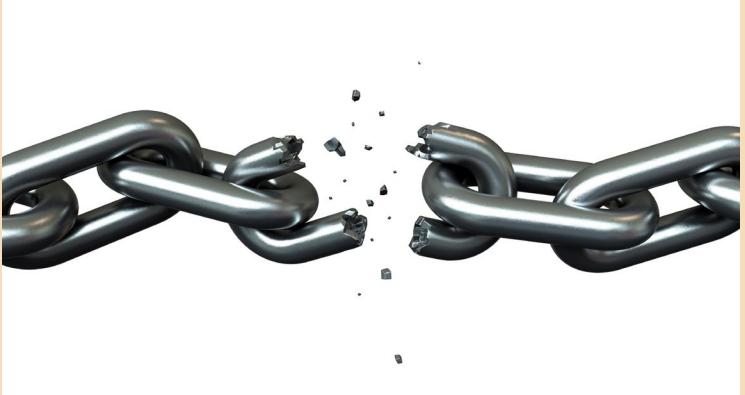
Complex Event  
Processing

High Volume/Velocity  
Data

# Drawbacks

## Event-Driven Architecture

Decoupling



Encapsulation



Responsive



Scalable/Distributed



Independence



# Drawbacks

## Event-Driven Architecture

Steep Learning Curve



Complexity



Loss of Transactionality



Lineage



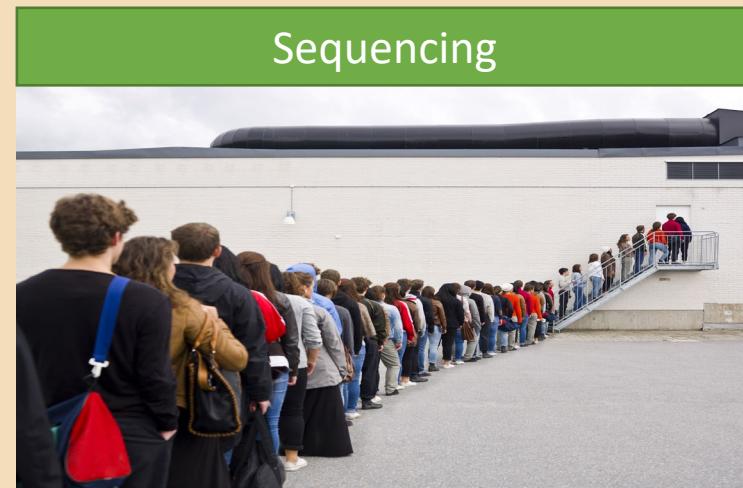
# Limitations

## Event-Driven Architecture

Guaranteed Delivery



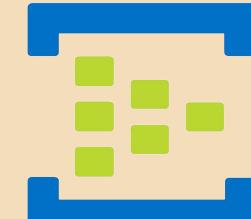
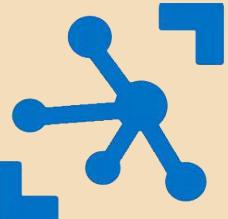
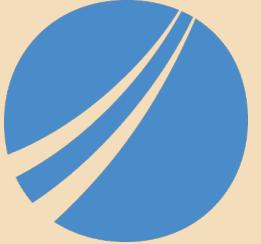
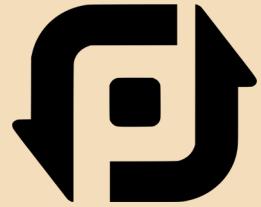
Sequencing



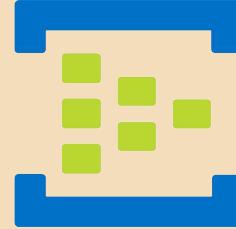
# IMPLEMENTATION OPTIONS



# Implementation Options

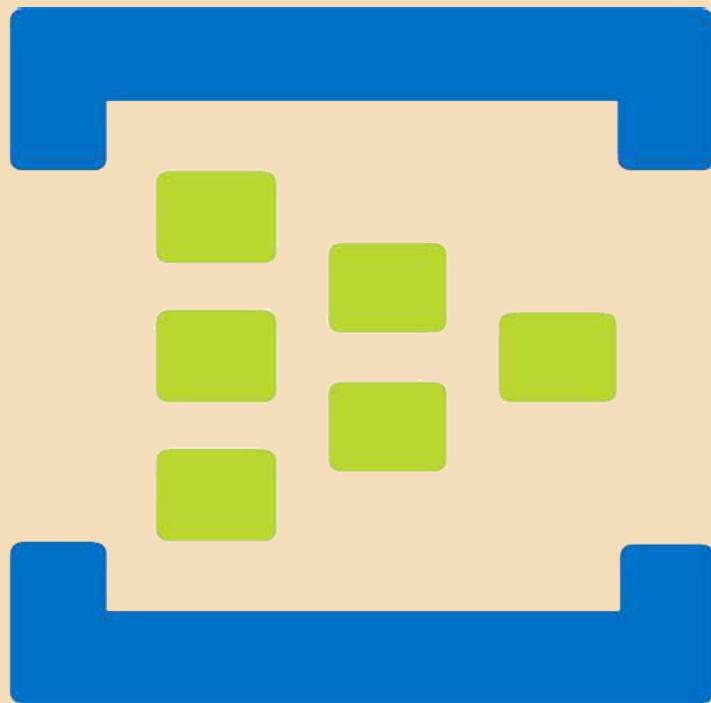


# Implementation Options



# Azure Event Hubs

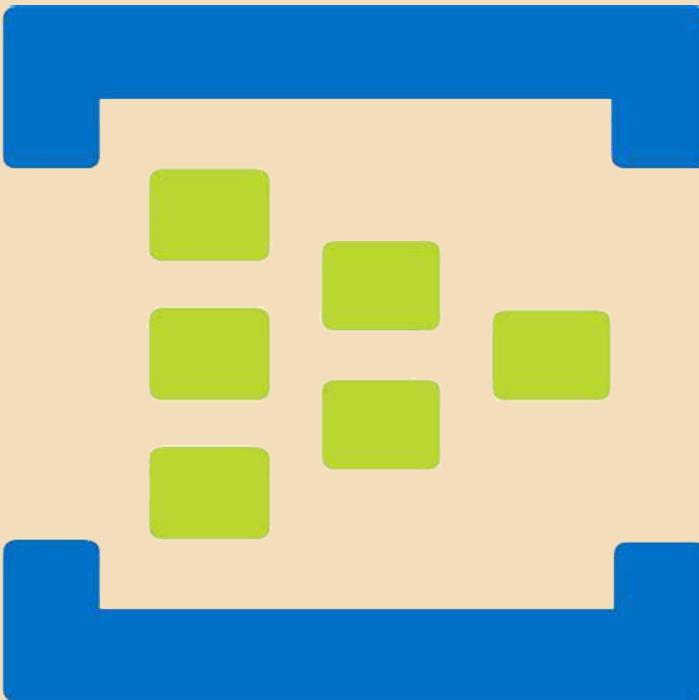
Simple, secure, and scalable real-time data ingestion



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

# Why choose Event Hubs?

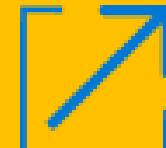
Azure Event Hubs



Simple



Secure



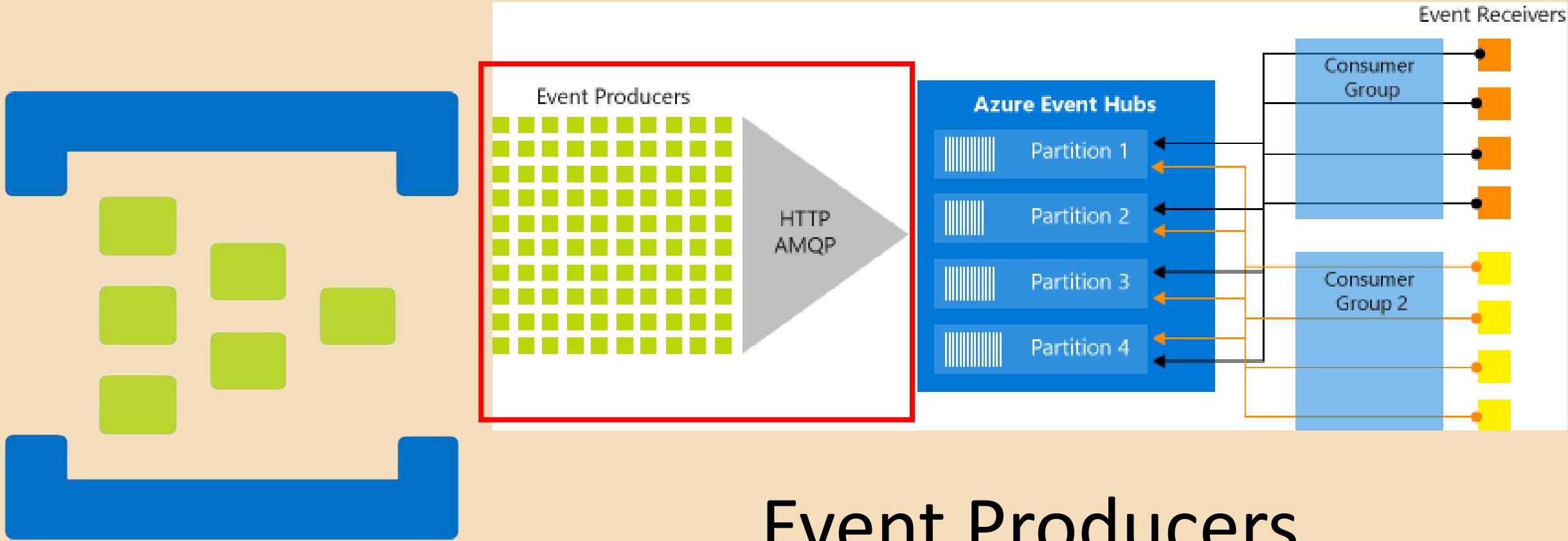
Scalable



Open

# Key Architecture Components

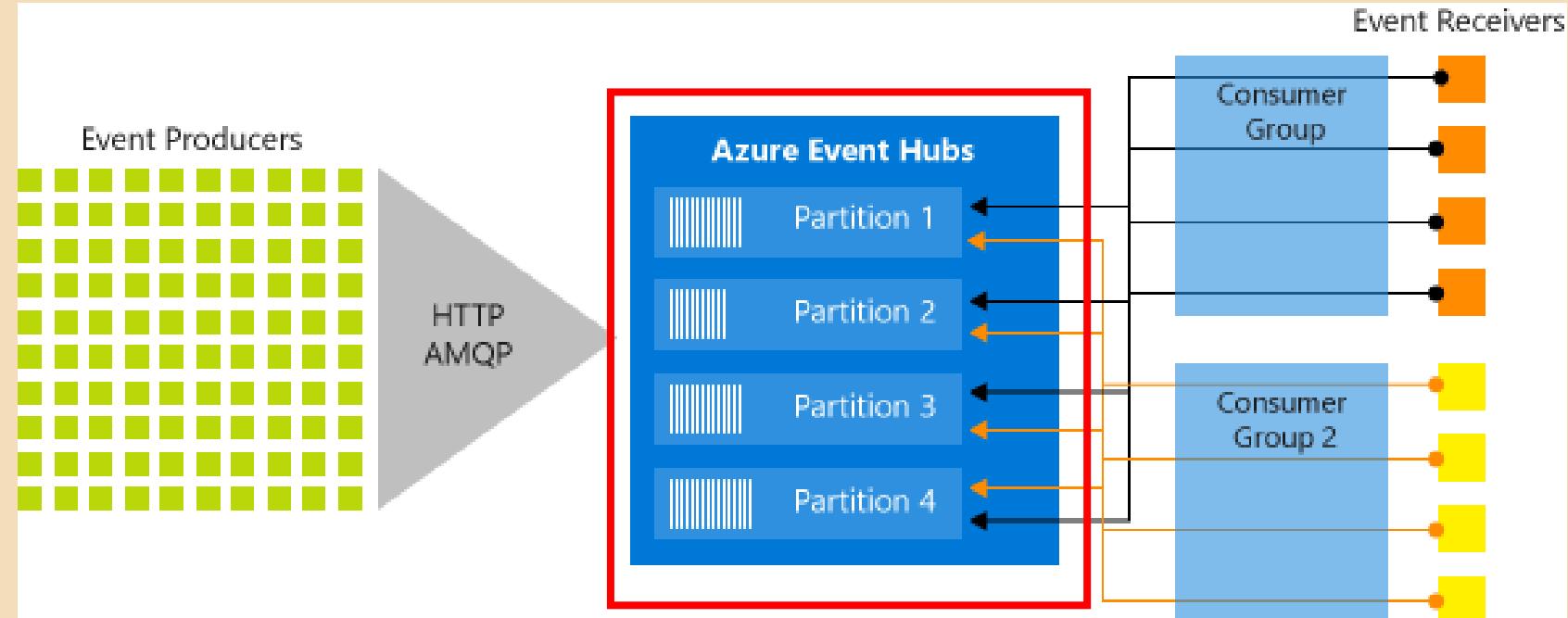
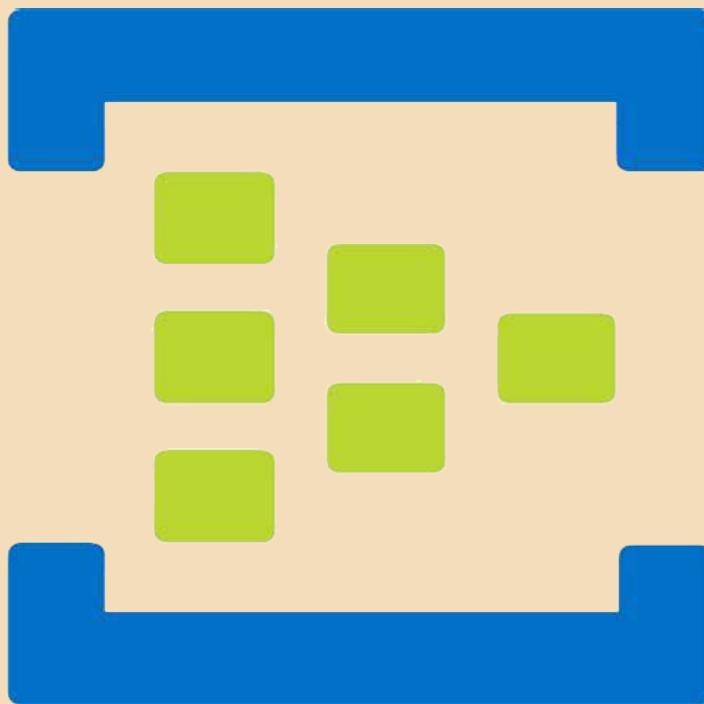
## Azure Event Hubs



Event Producers

# Key Architecture Components

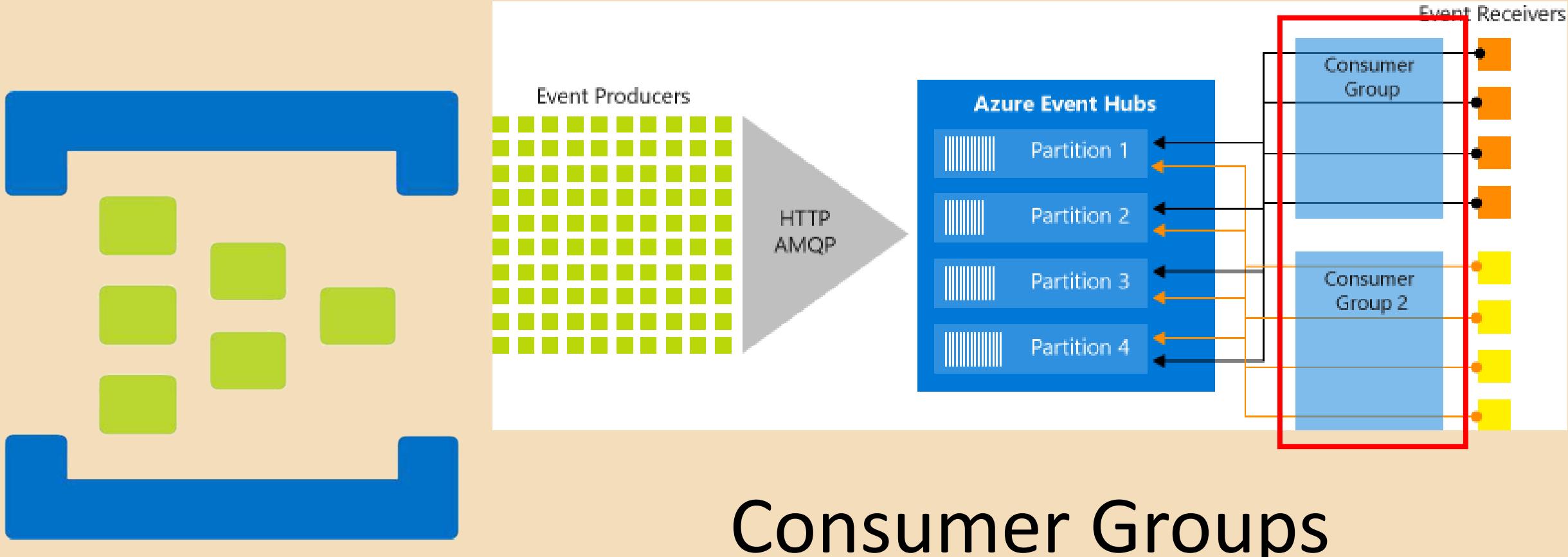
## Azure Event Hubs



## Partitions

# Key Architecture Components

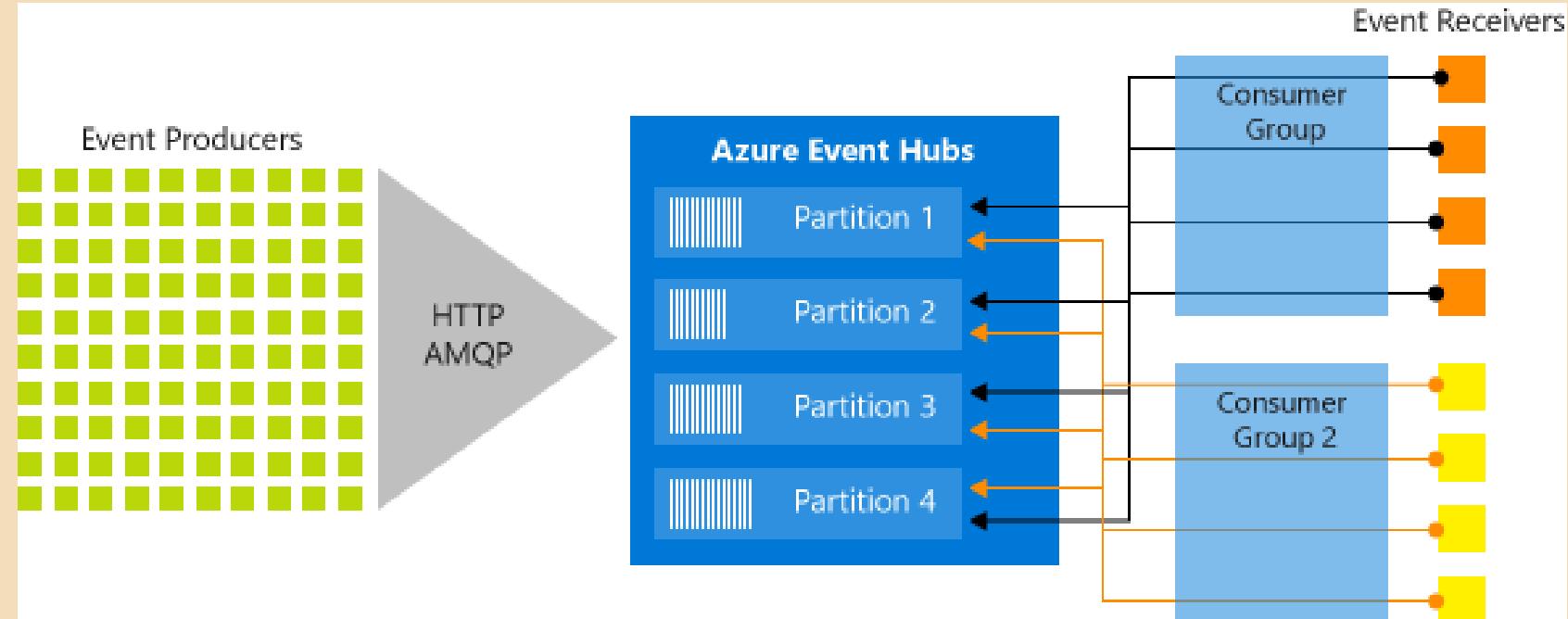
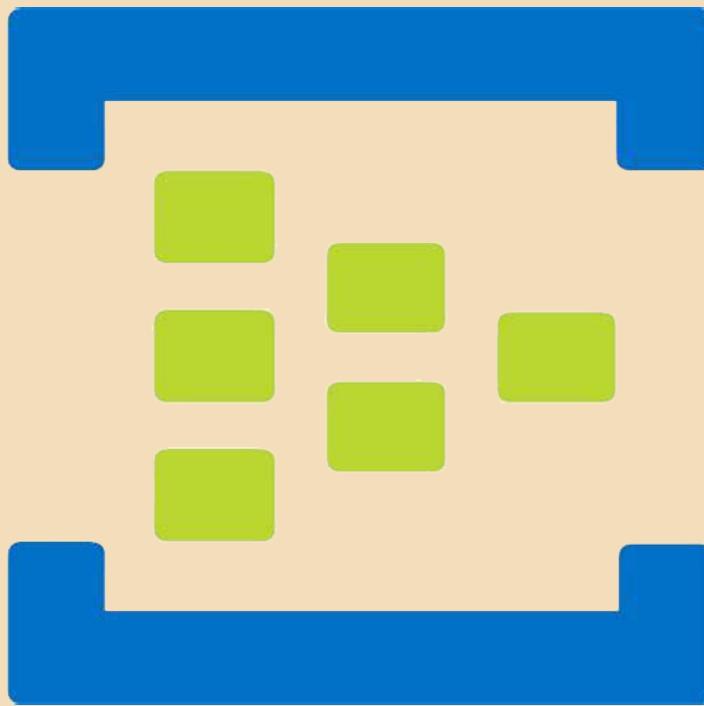
# Azure Event Hubs



# Consumer Groups

# Key Architecture Components

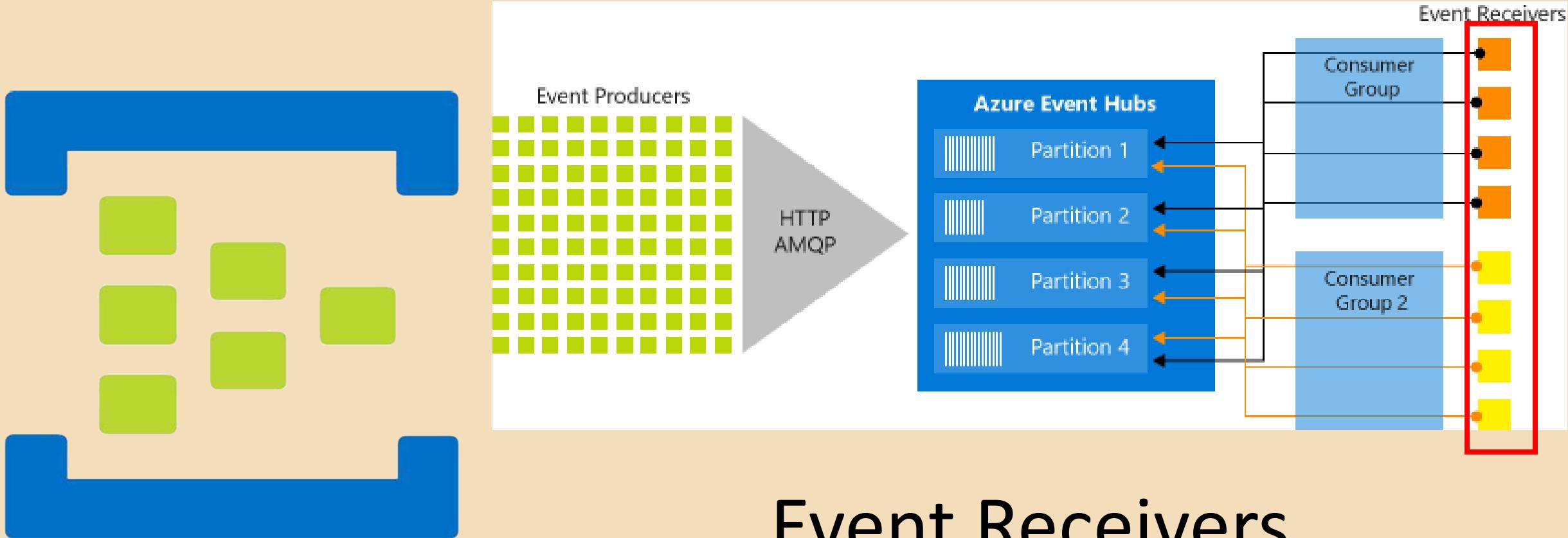
## Azure Event Hubs



## Throughput Units

# Key Architecture Components

## Azure Event Hubs



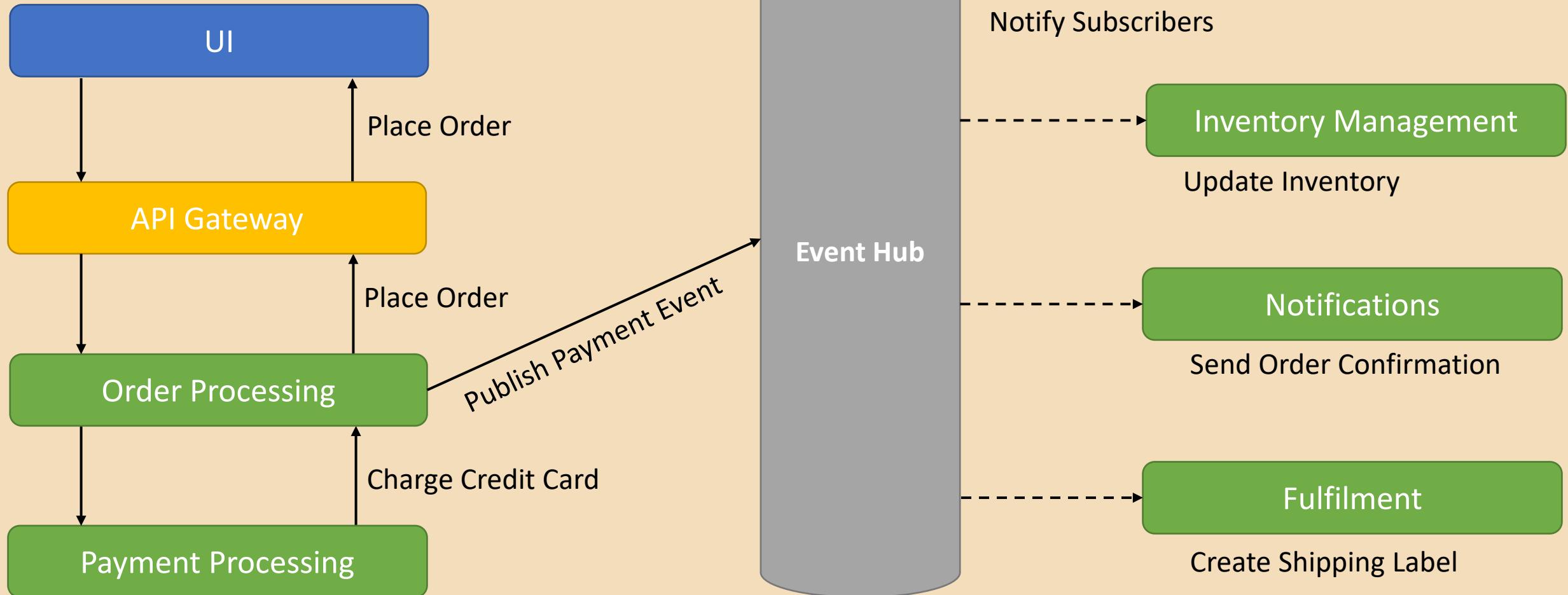
## Event Receivers

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

## Summary

---

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- Garner -

# SWOT

## Summary

### Strengths

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

# SWOT

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- Real-Time Processing
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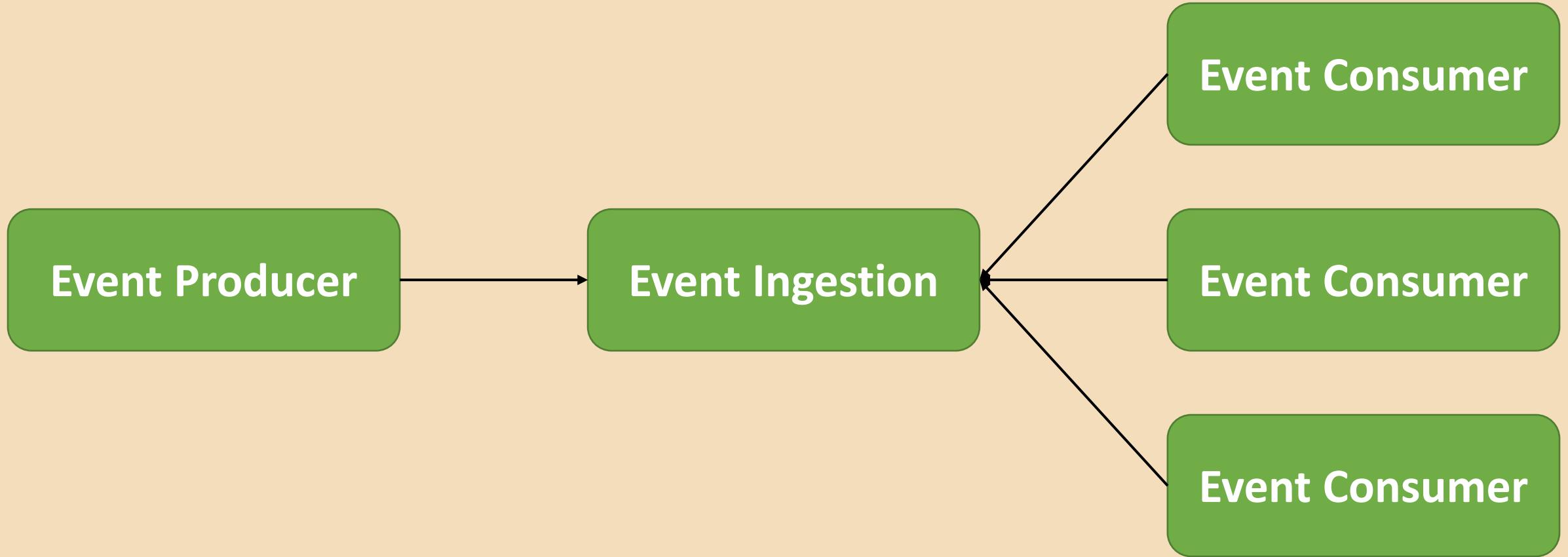
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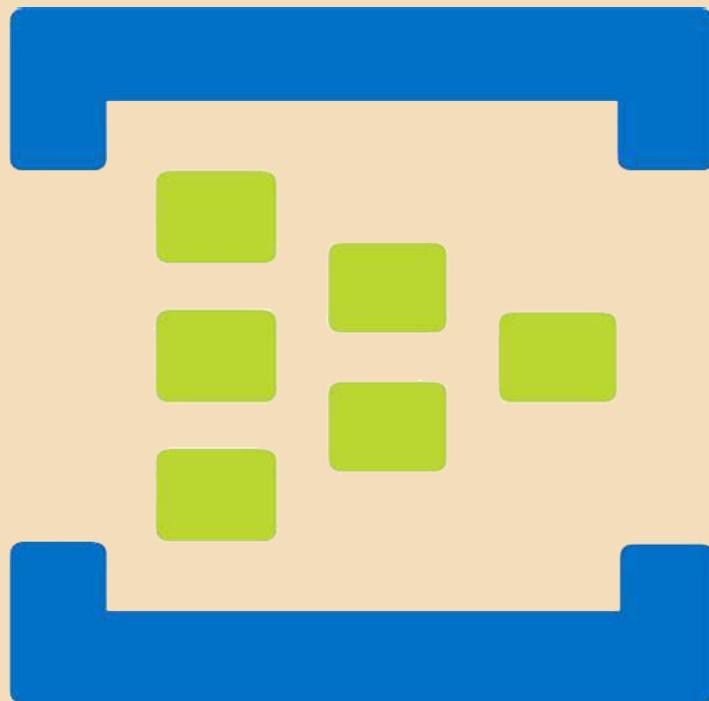
# Event-Driven Architecture

## Summary



# Azure Event Hubs

## Summary



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

Simple | Secure | Scalable | Open

# Thank You!

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- 🐦 ChadGreen & TaleLearnCode
- linkedin ChadwickEGreen

