



# EVENT-DRIVEN ARCHITECTURE IN THE CLOUD



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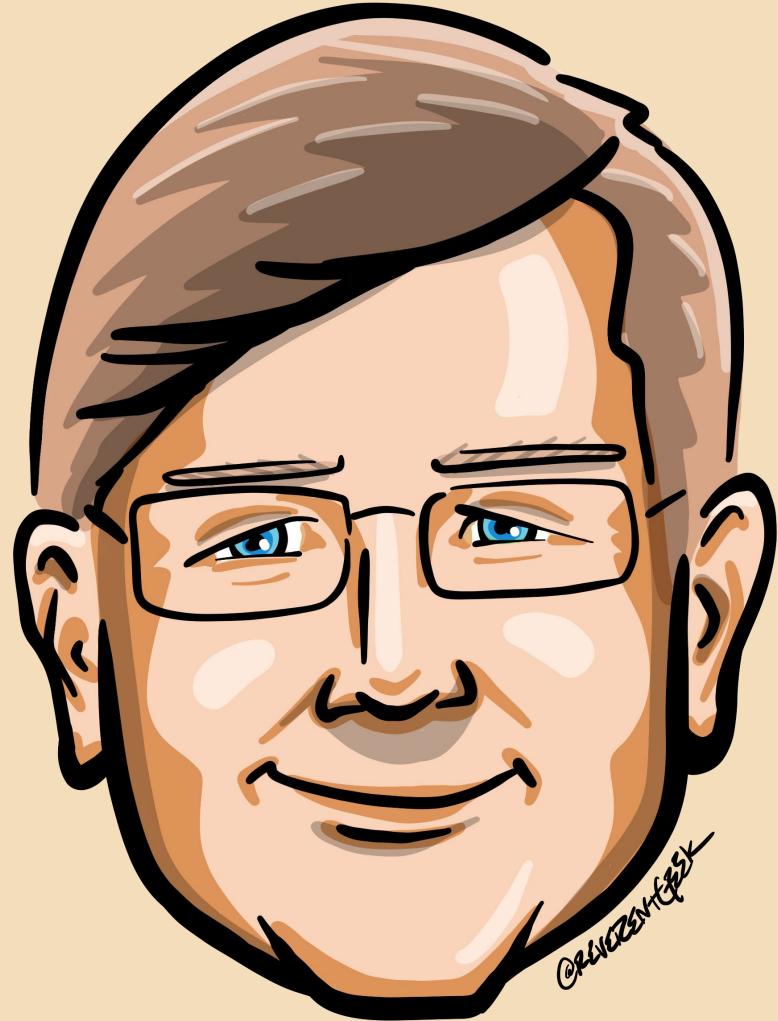
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<code>  
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# Who is Chad Green

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

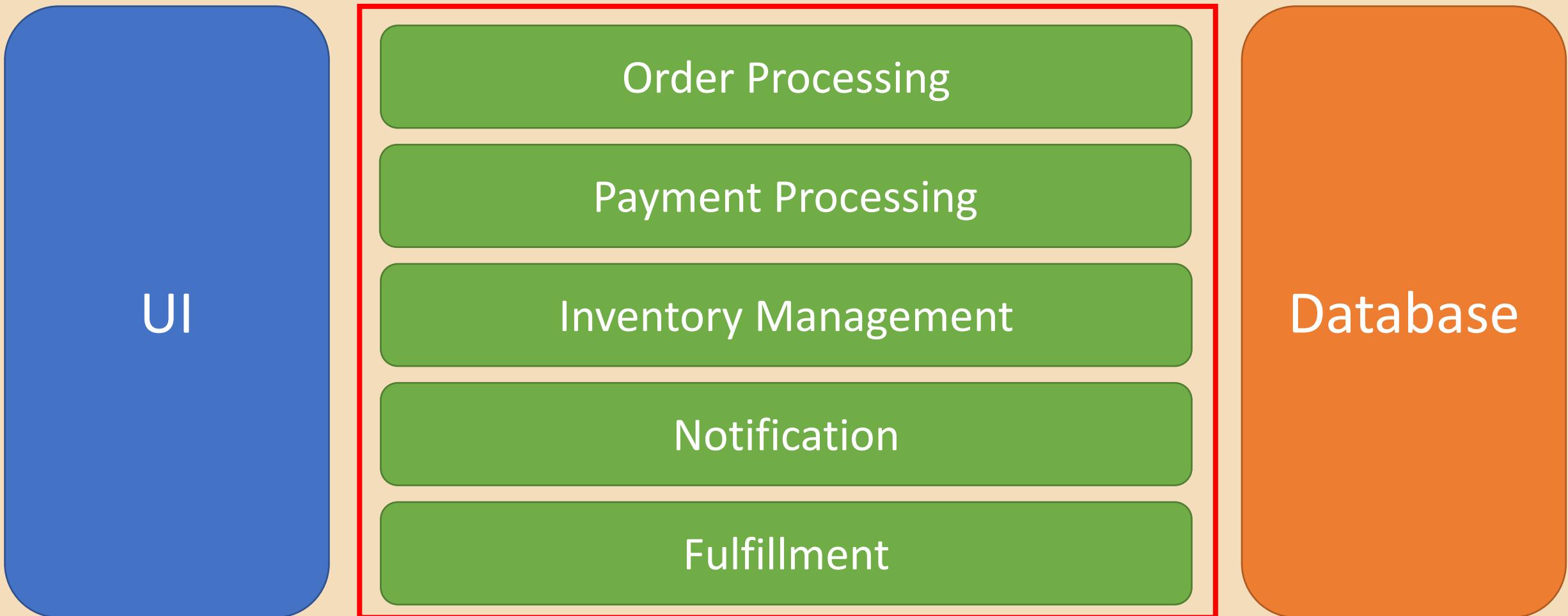


# PREAMBLE



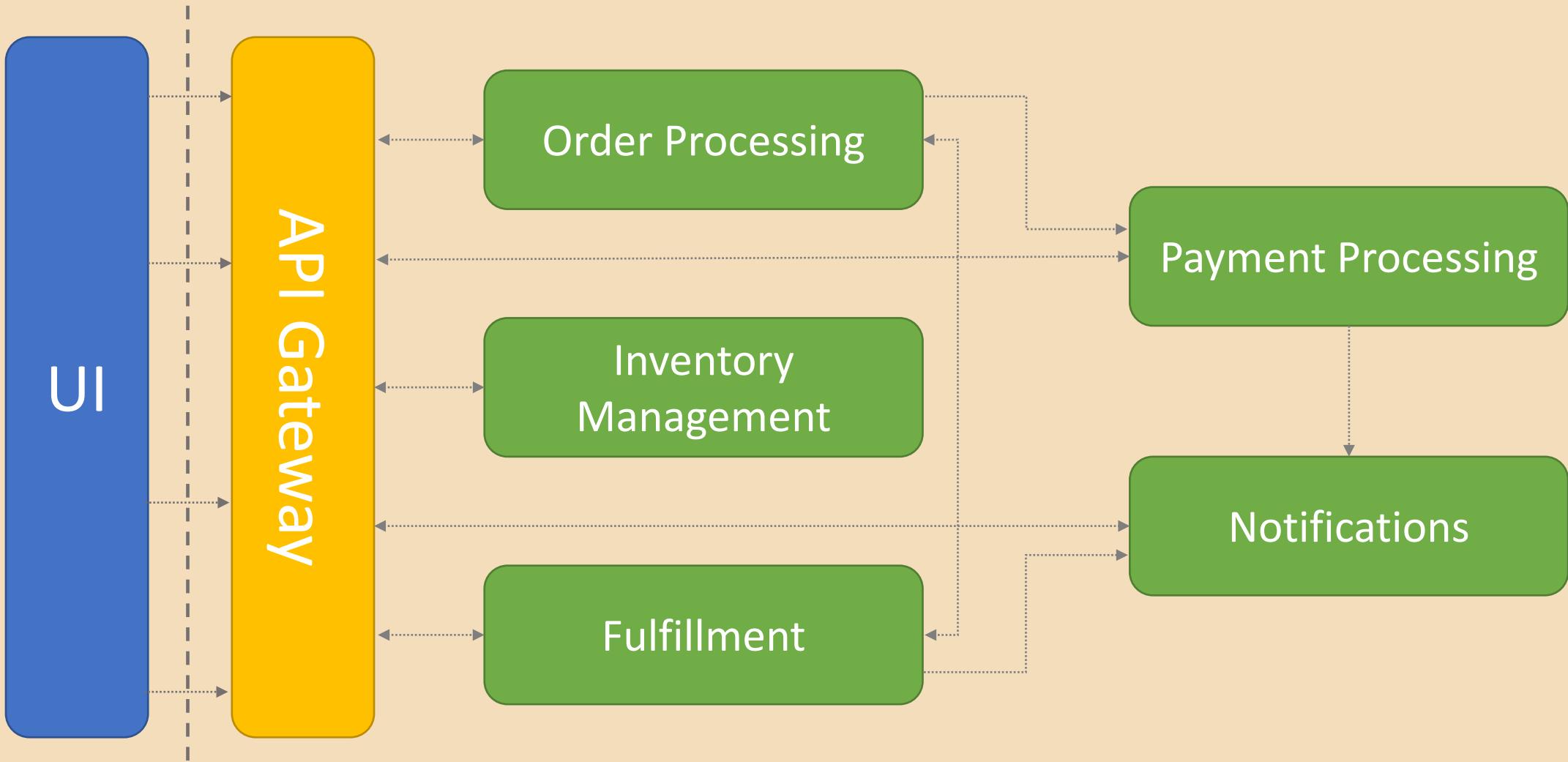
# Monolith

## Enterprise Architecture



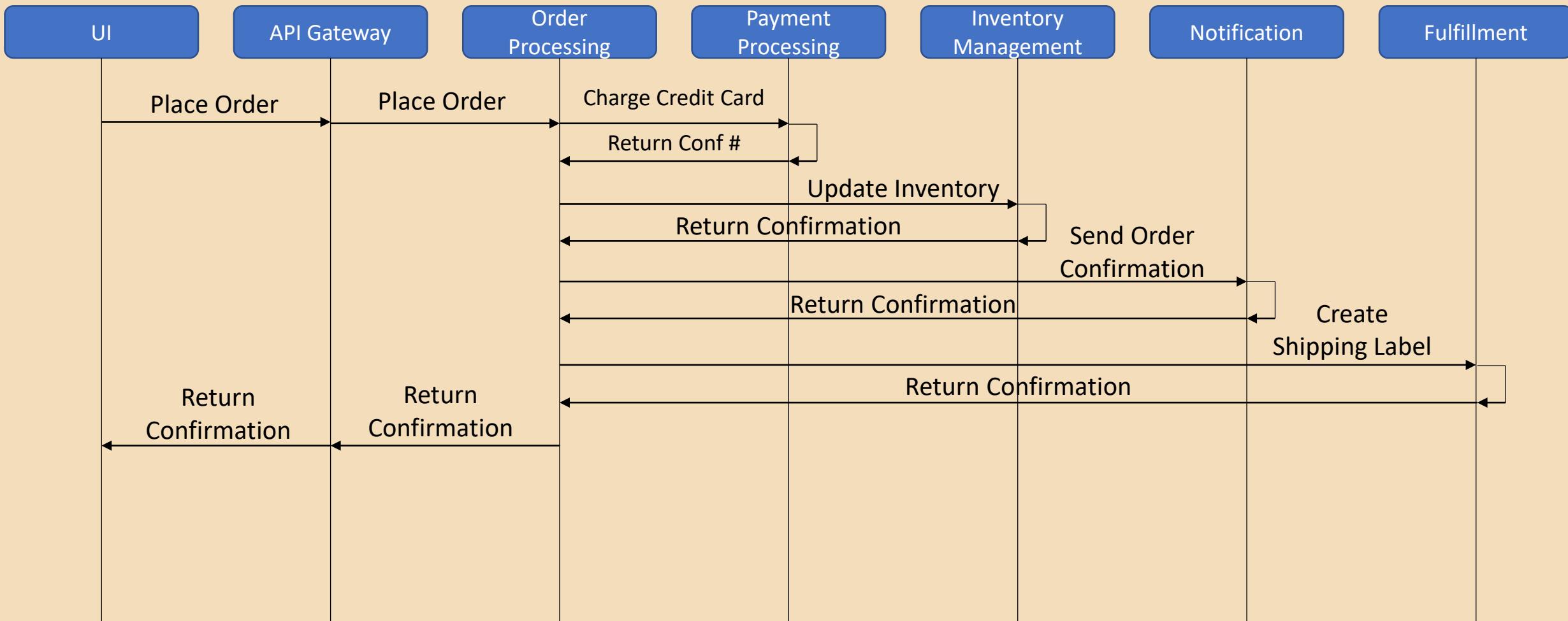
# Microservices

## Enterprise Architecture



# Process Flow

## Microservices



# EVENT-DRIVEN ARCHITECTURE



# Event-Driven Architecture

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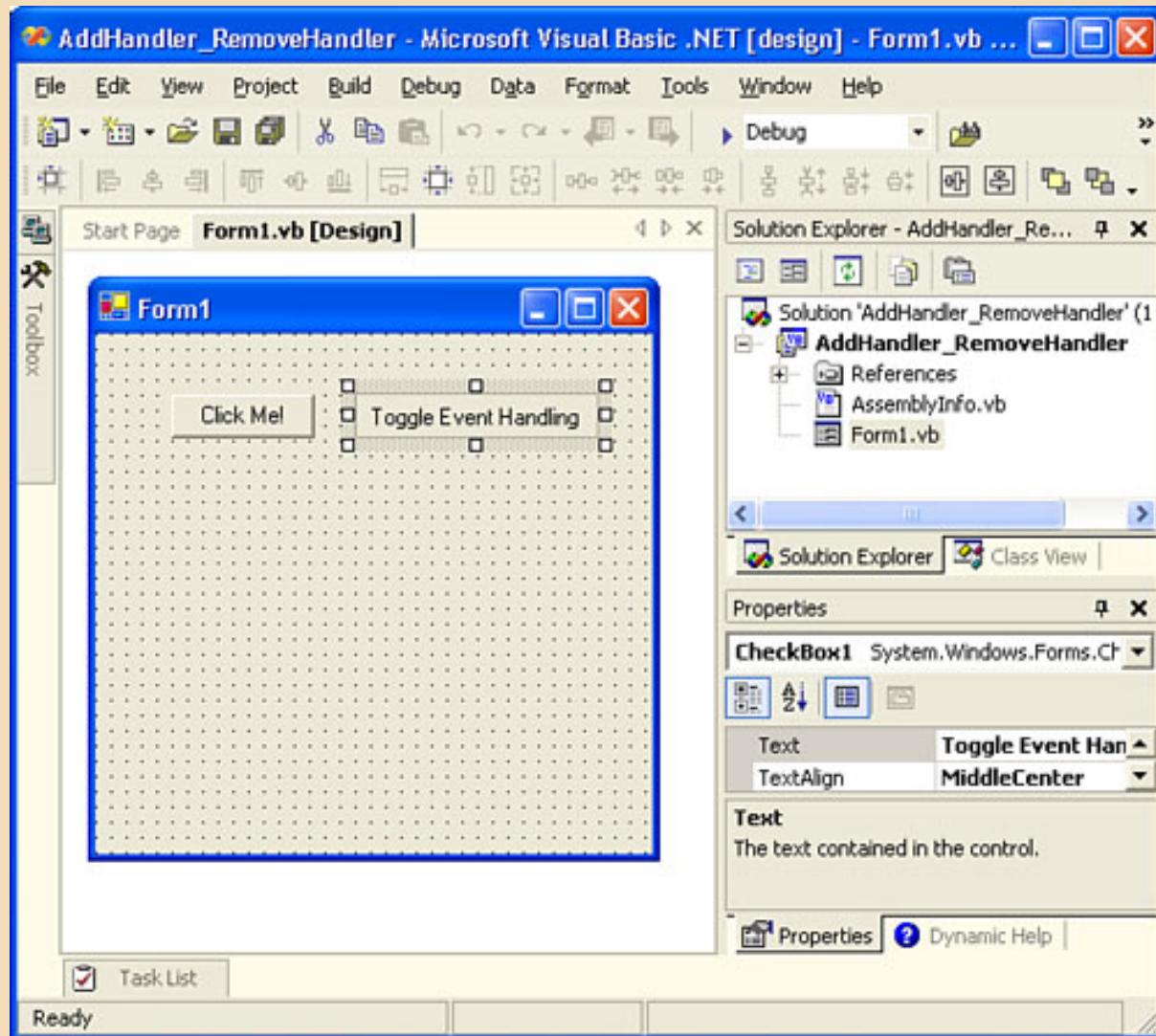
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A software architecture pattern  
promoting the production, detection,  
consumption of, and reaction to **events**.

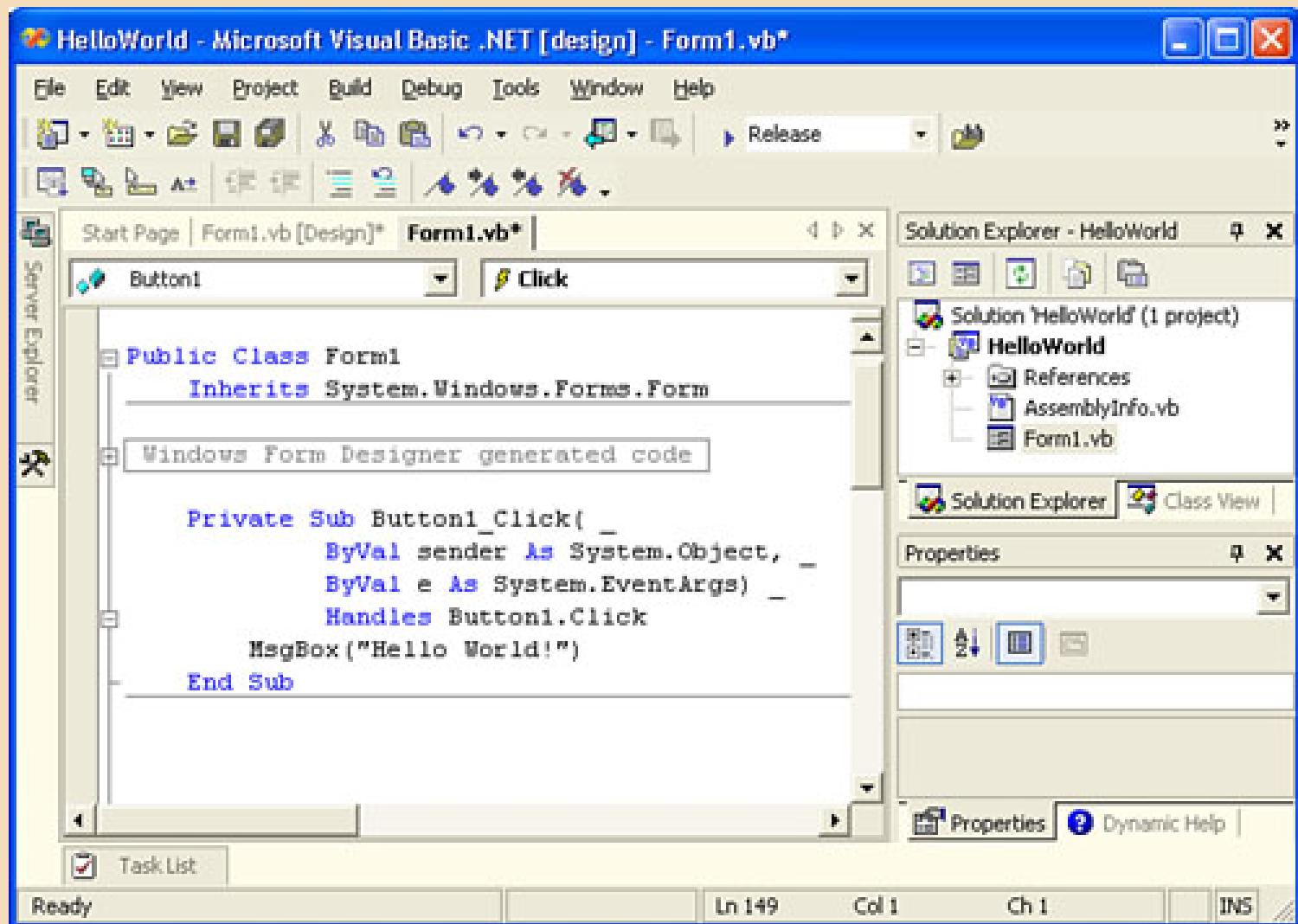
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- Wikipedia -

# Event-Driven Architecture



# Event-Driven Architecture



# Event-Driven Architecture

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“

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

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- Garner -

# Event-Driven Architecture

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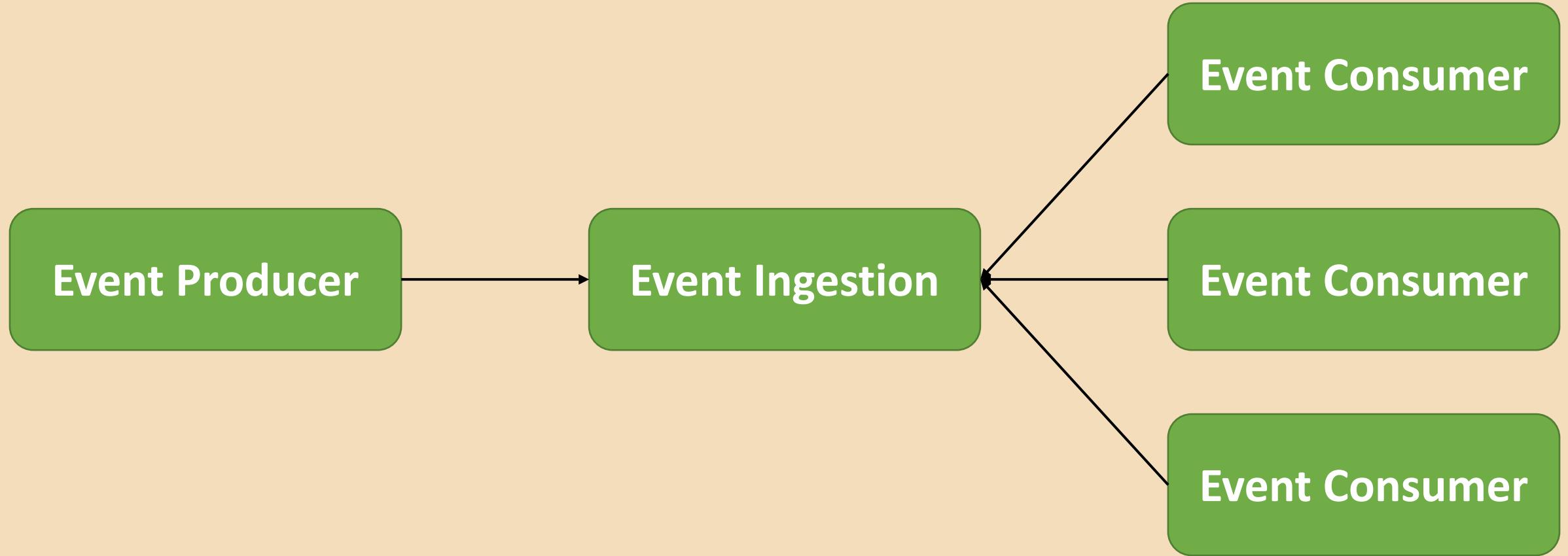
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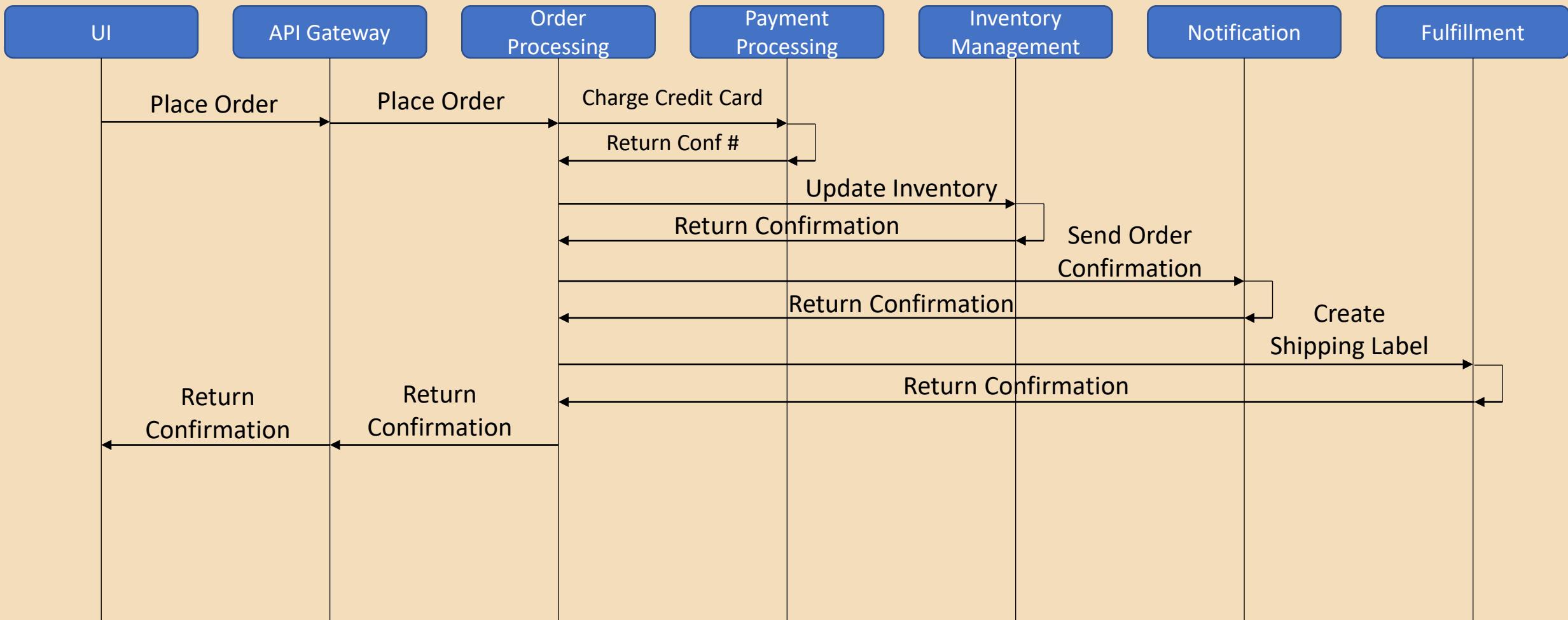
- Garner -

# Event-Driven Architecture



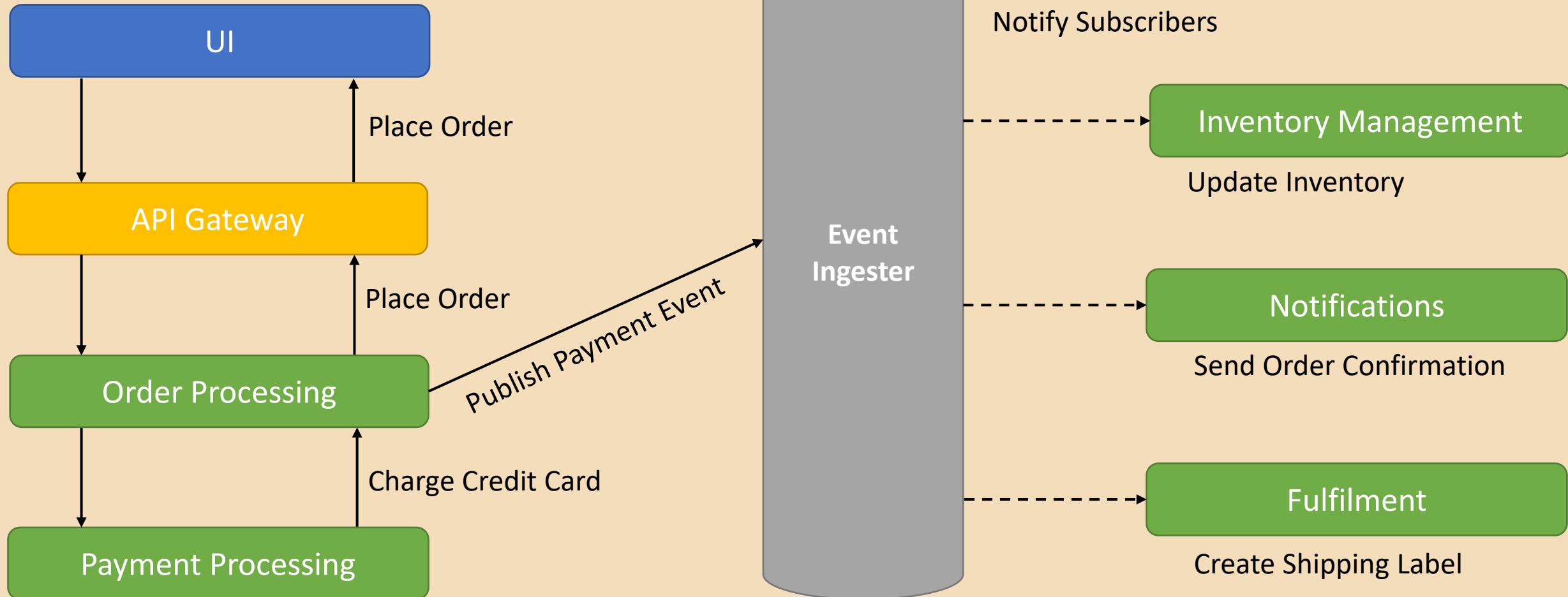
# Process Flow

## Microservices



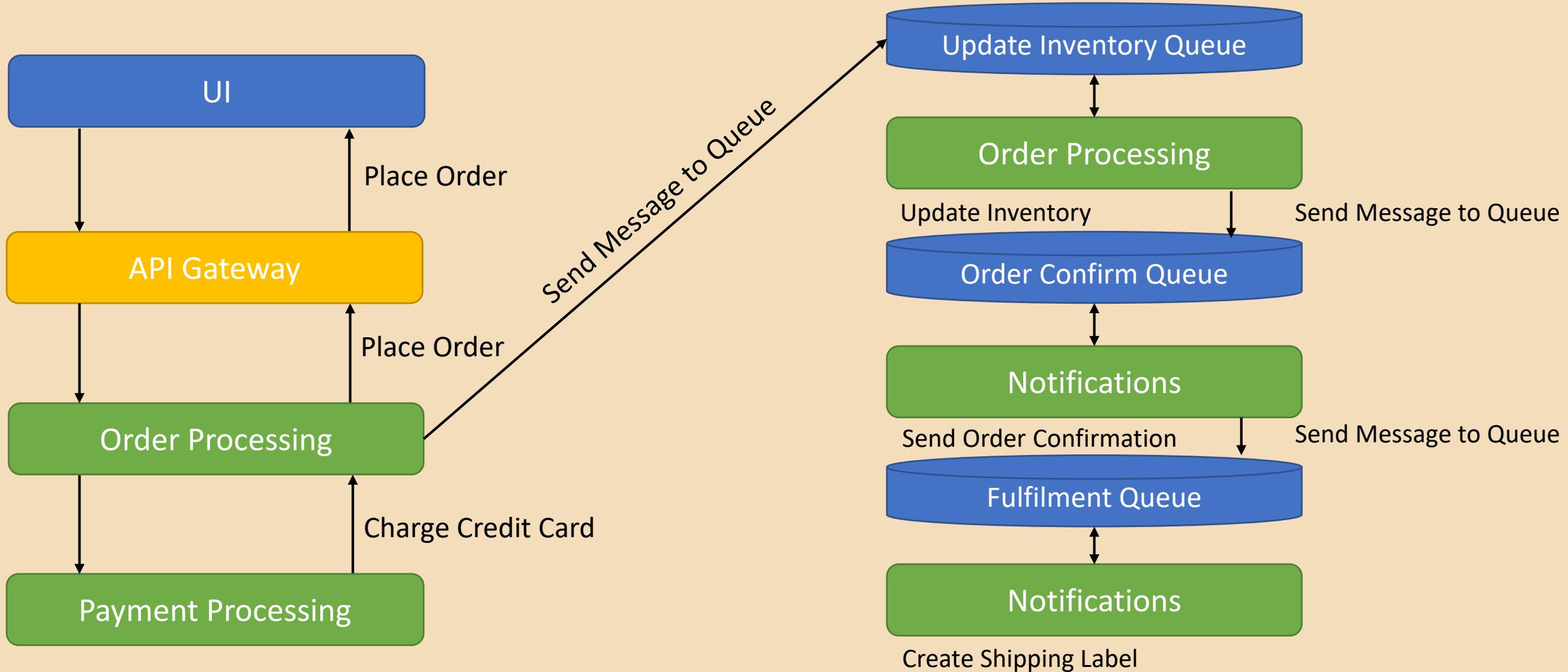
# Process Flow

## Event-Driven Architecture



# Not Queue Based Processing

## Event-Driven Architecture

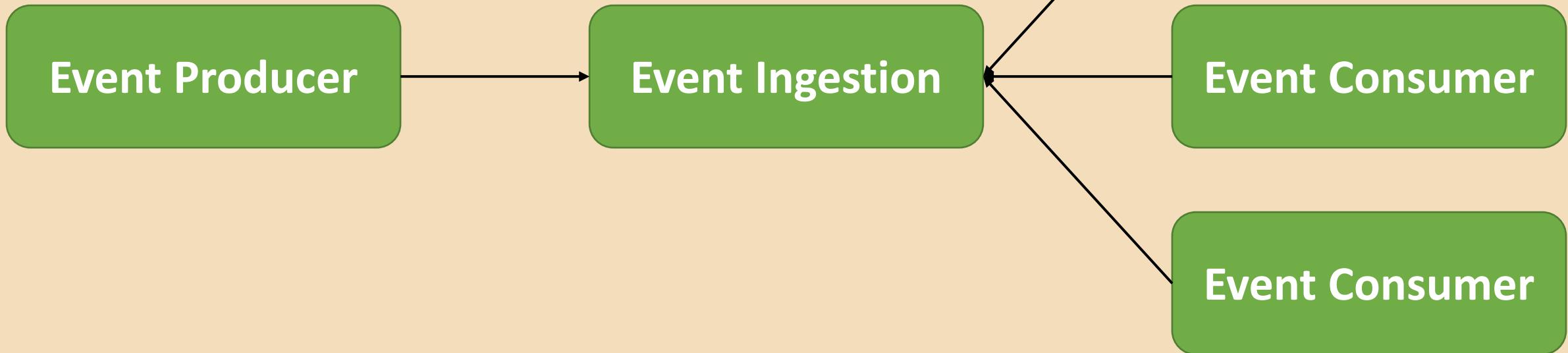


# Event Consumption Models

Event-Driven Architecture

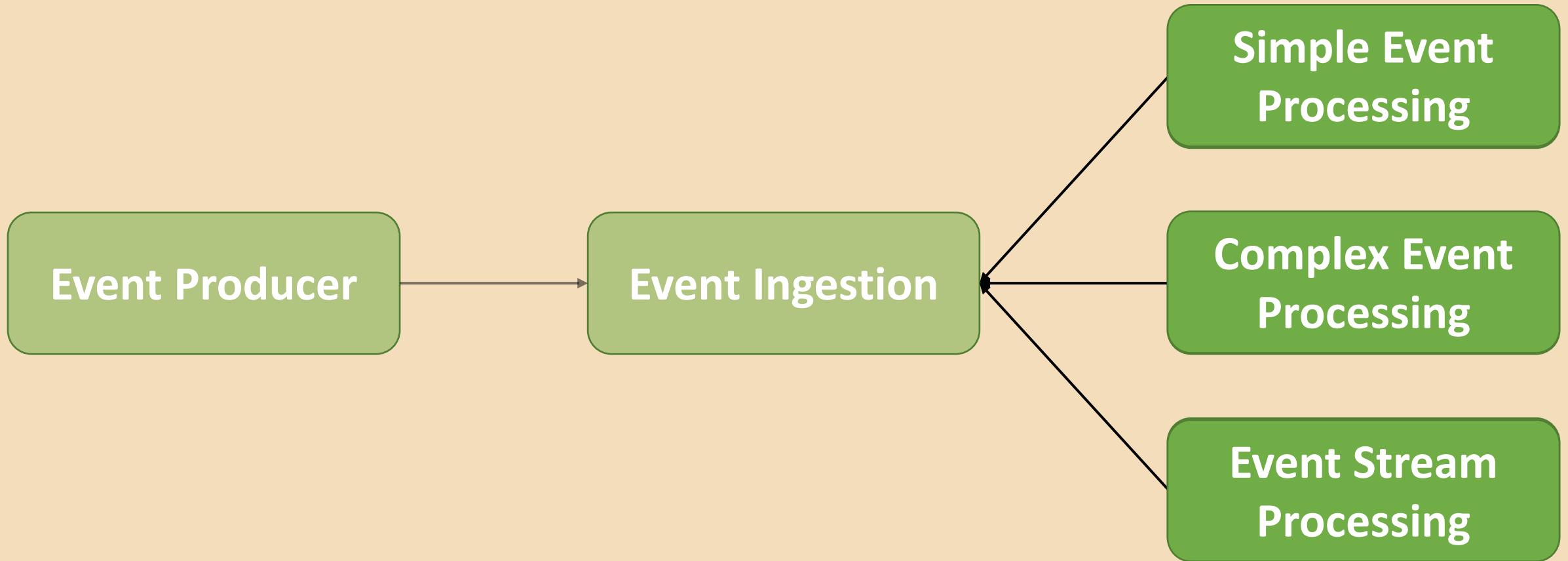
Pub/Sub

Event Streaming



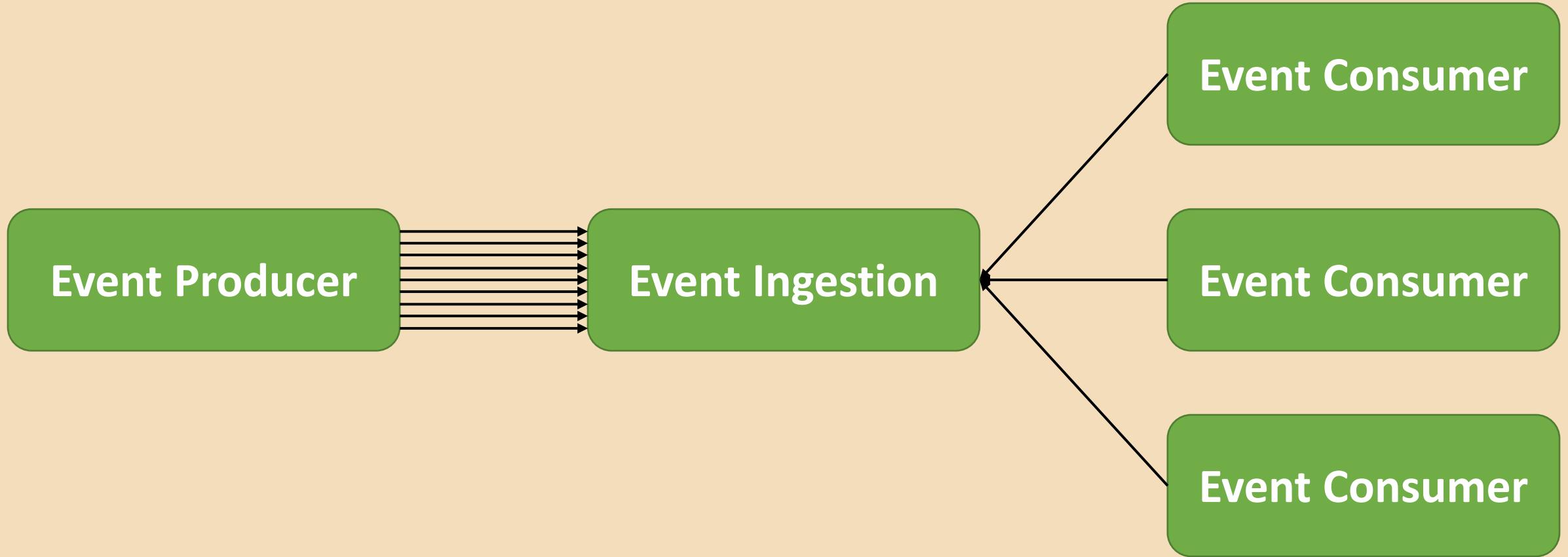
# Consumer Processing Variations

Event-Driven Architecture



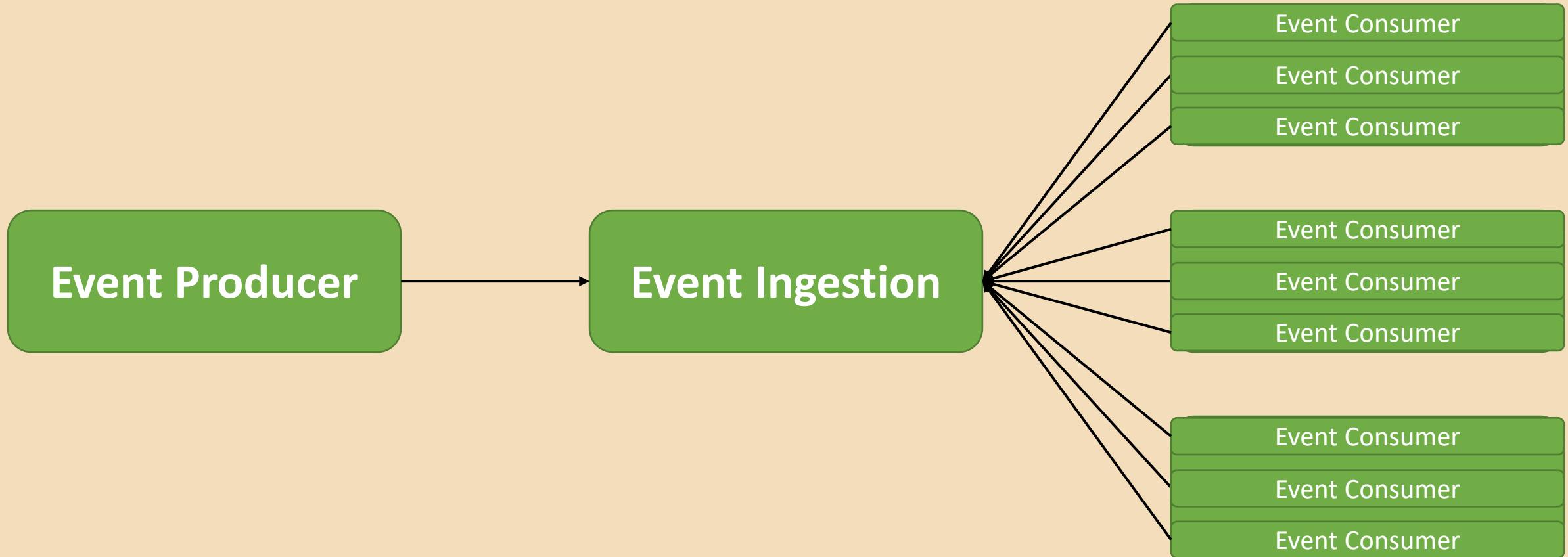
# External Event Sources

## 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**

# Benefits

## Event-Driven Architecture

Decoupling



Encapsulation



Responsive



Scalable/Distributed



Independence



# Drawbacks

## Event-Driven Architecture

Steep Learning Curve



Complexity



Loss of Transactionality



Lineage



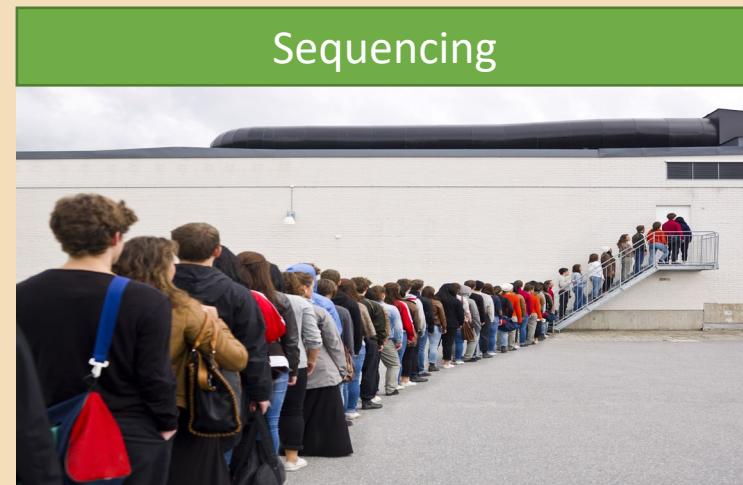
# Limitations

## Event-Driven Architecture

Guaranteed Delivery



Sequencing



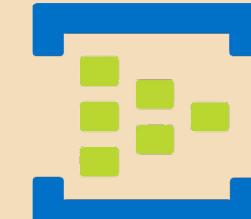
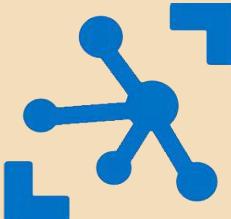
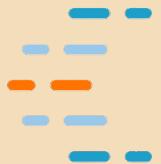
# IMPLEMENTATION OPTIONS



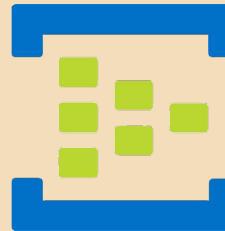
# Implementation Options



StreamSets

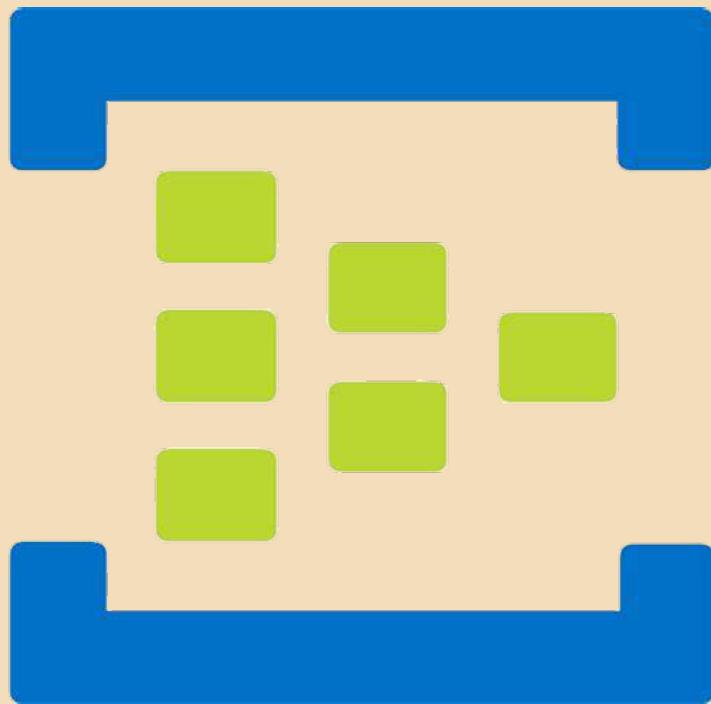


# Implementation Options



# Azure Event Hubs

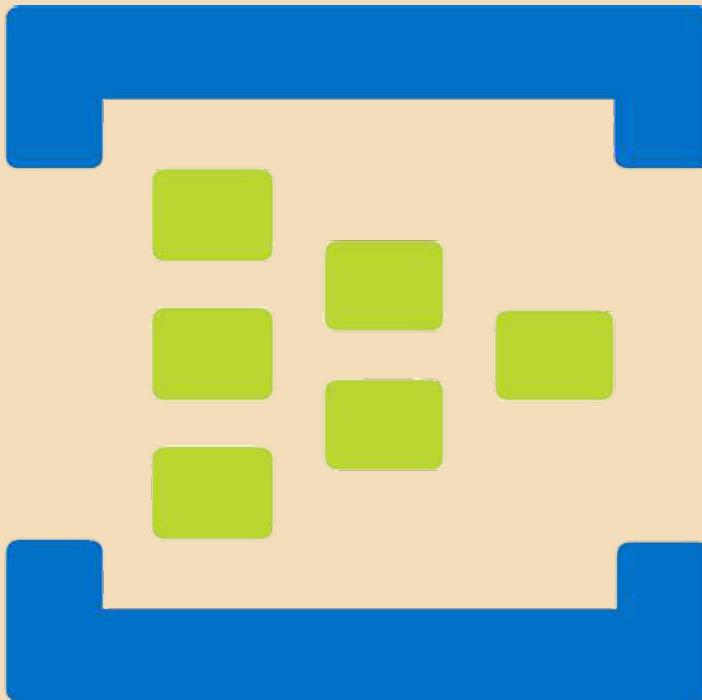
Simple, secure, and scalable real-time data ingestion



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

# Why choose Event Hubs?

Azure Event Hubs



Simple



Secure



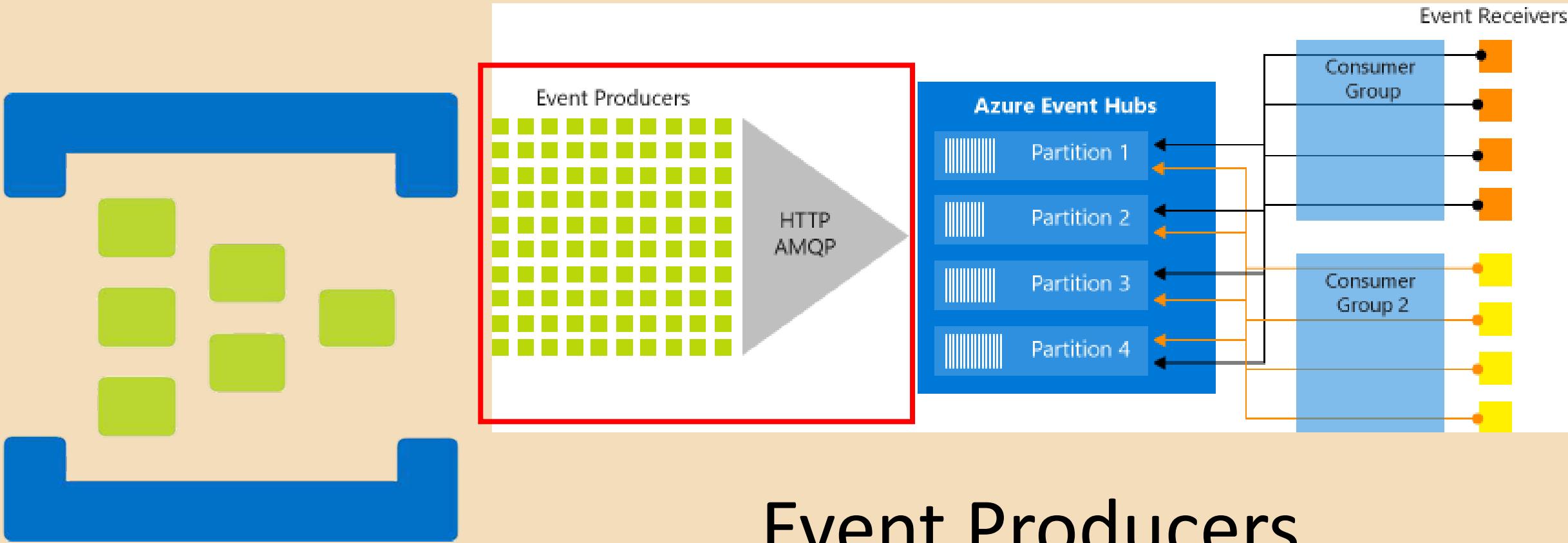
Scalable



Open

# Key Architecture Components

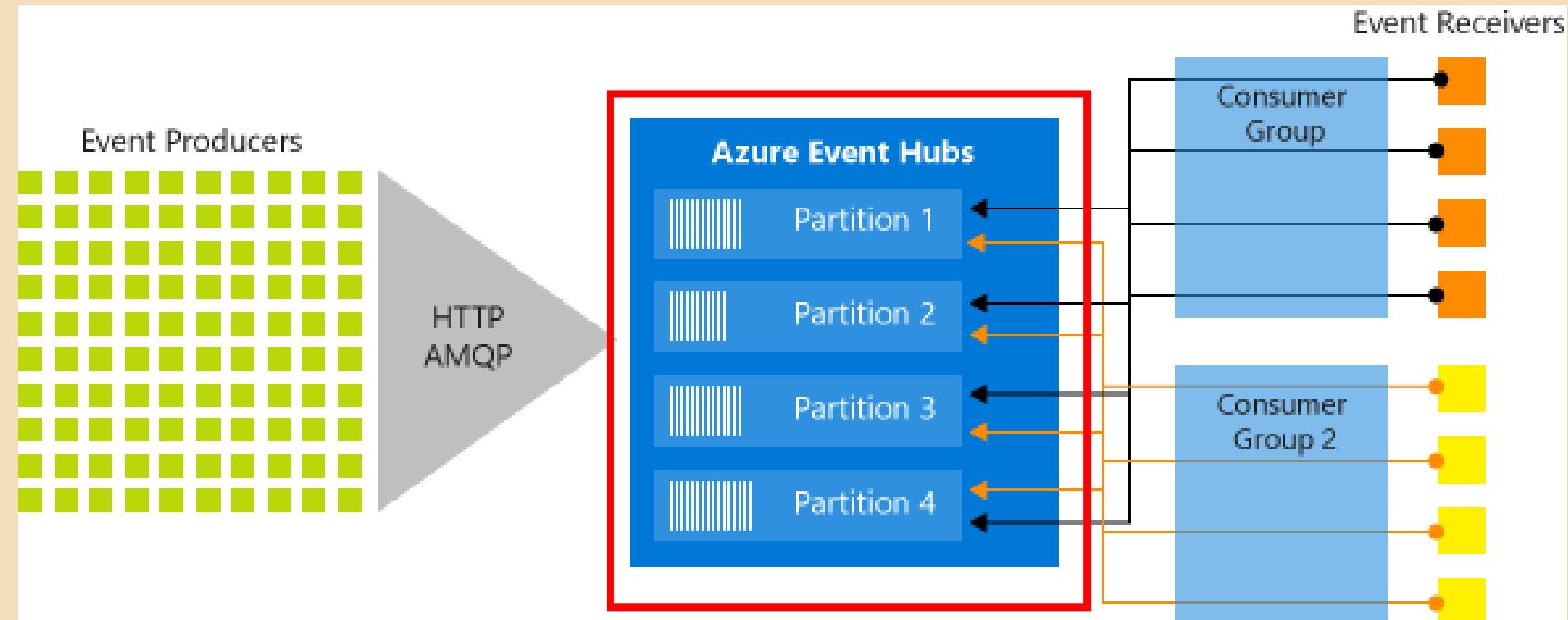
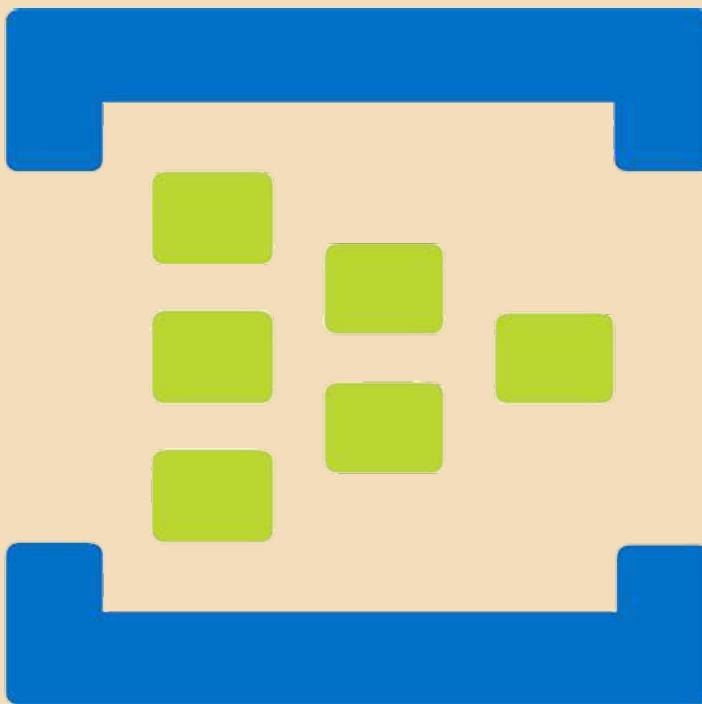
## Azure Event Hubs



Event Producers

# Key Architecture Components

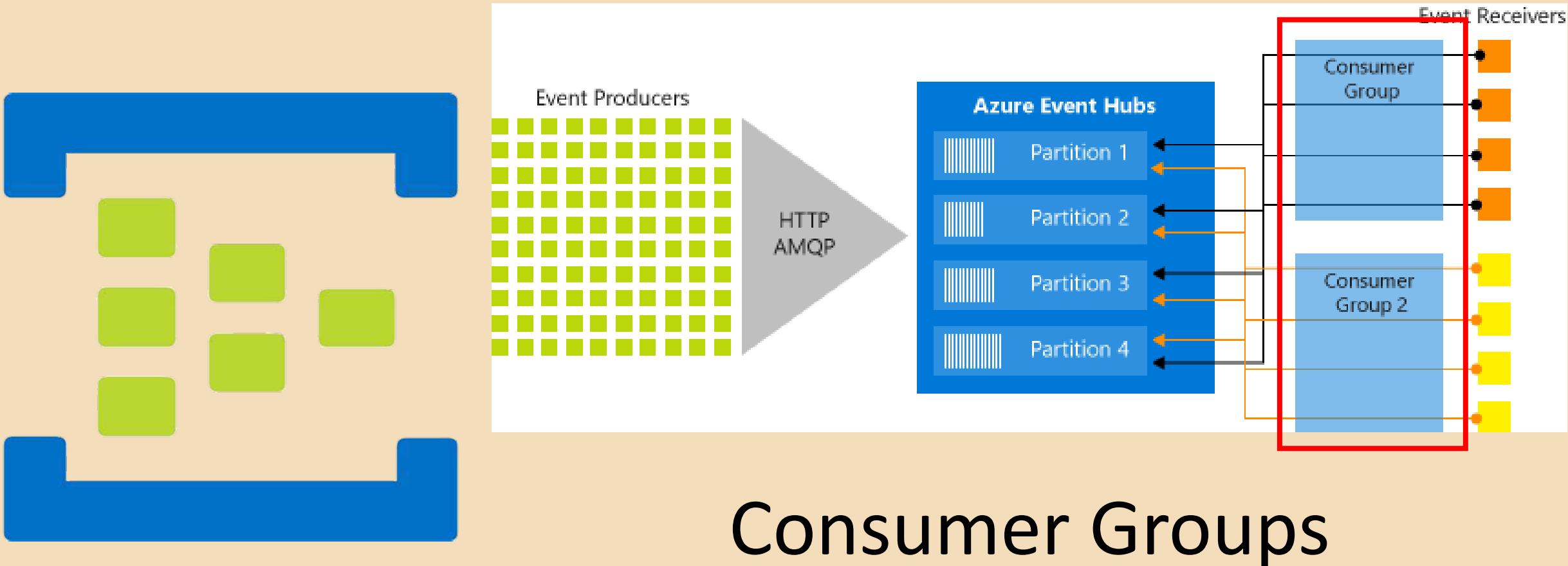
## Azure Event Hubs



## Partitions

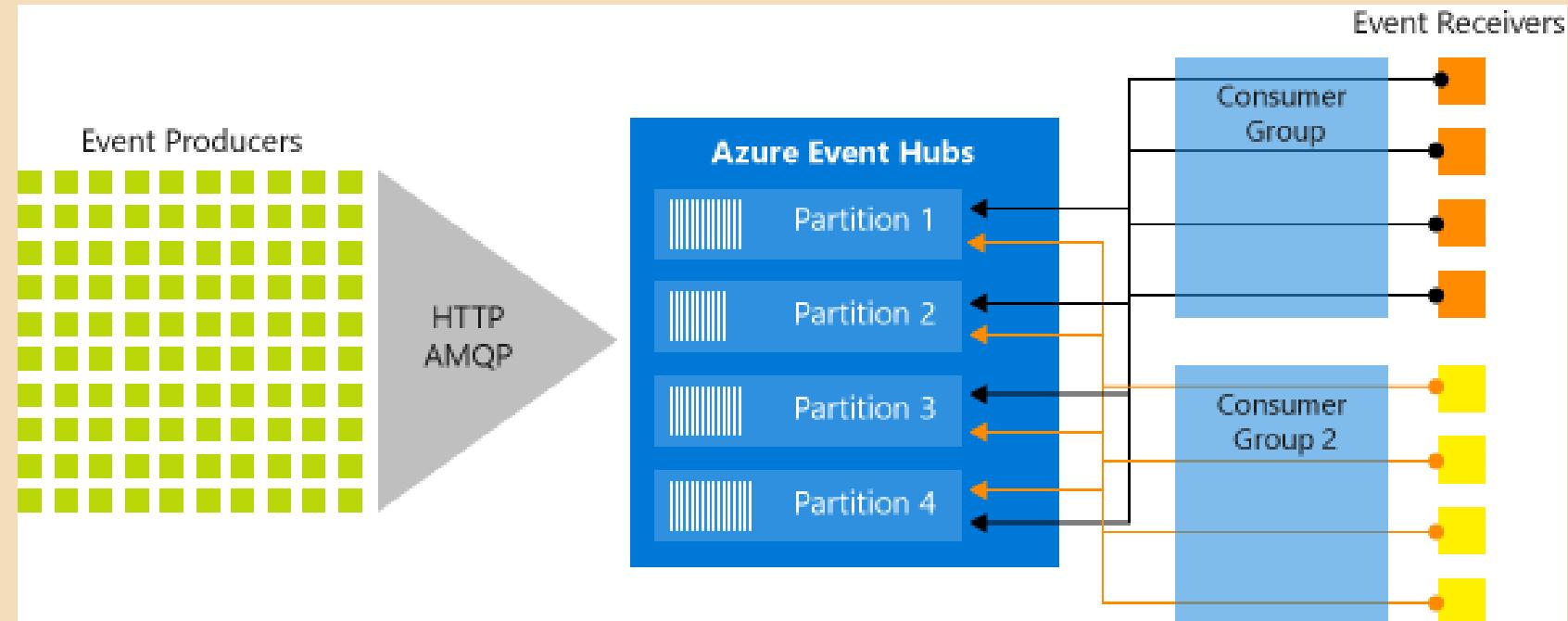
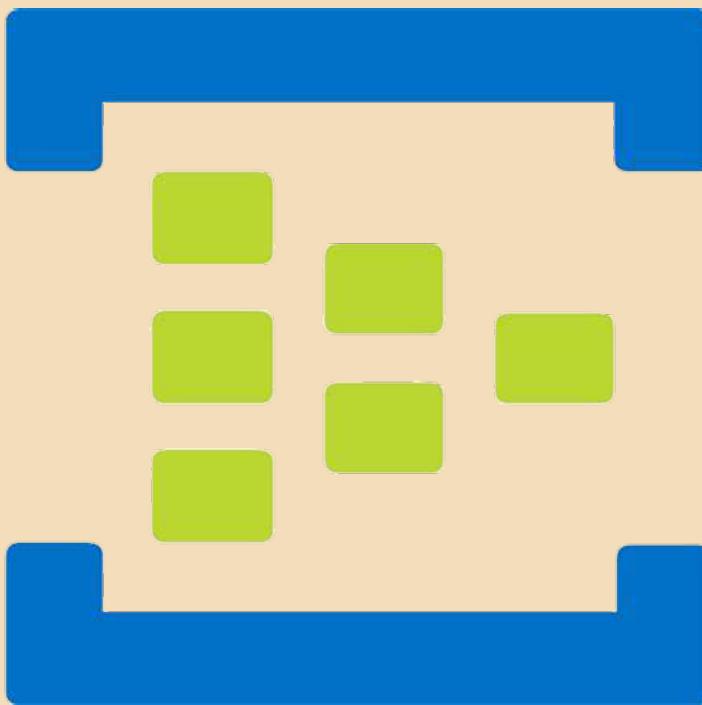
# Key Architecture Components

## Azure Event Hubs



# Key Architecture Components

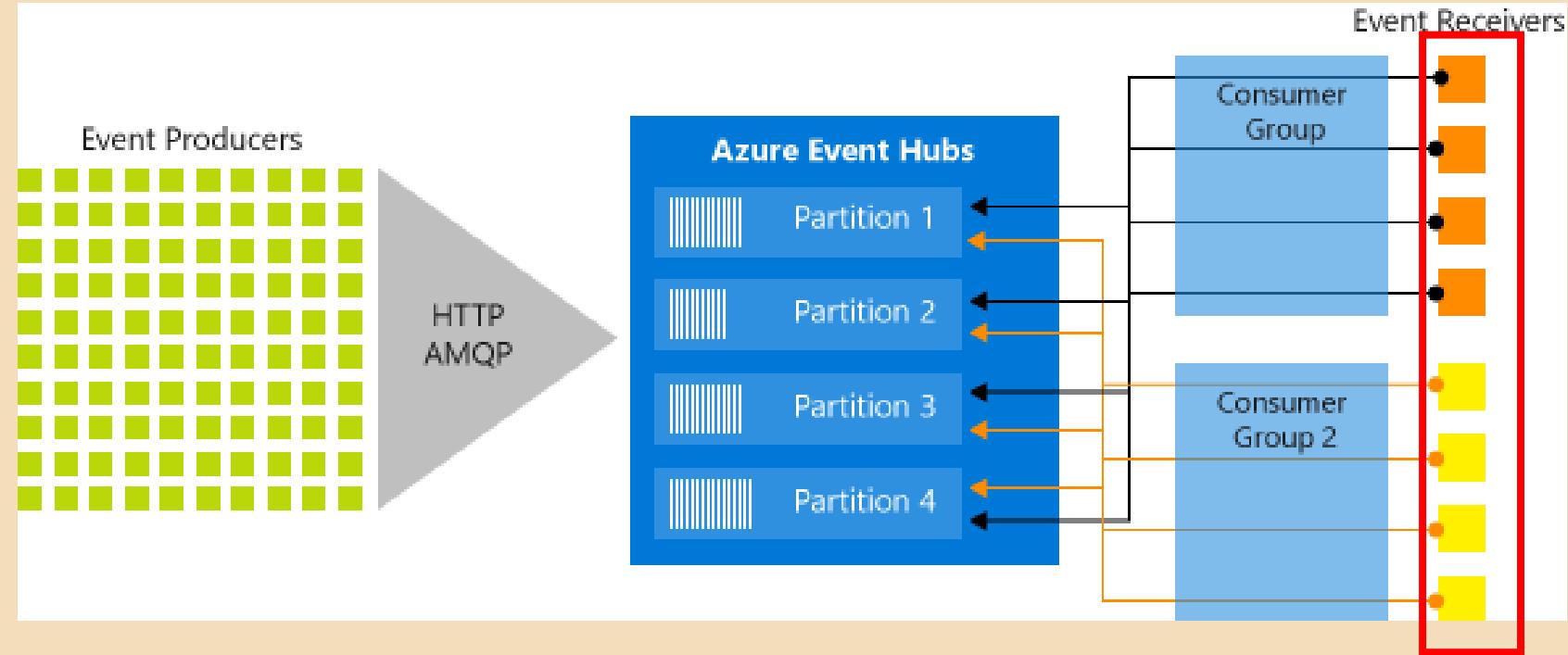
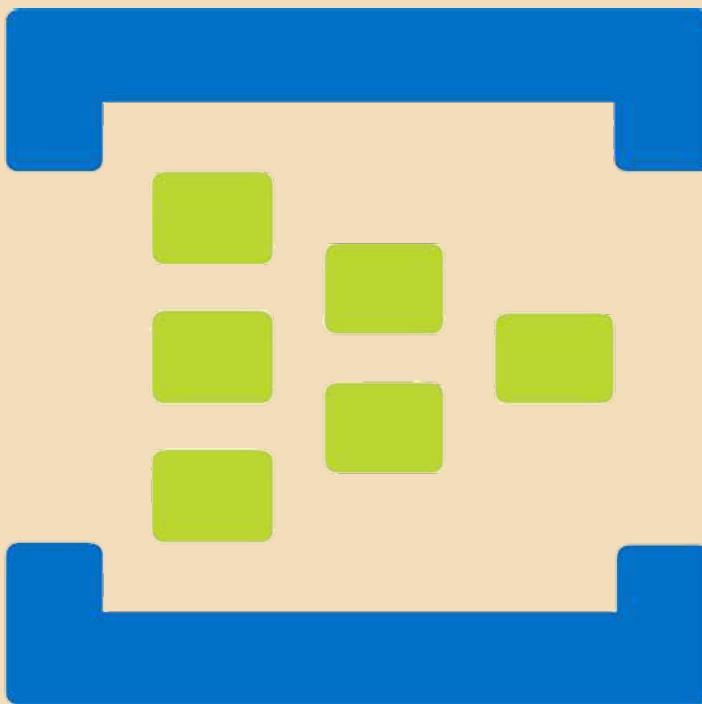
## Azure Event Hubs



## Throughput Units

# Key Architecture Components

## Azure Event Hubs



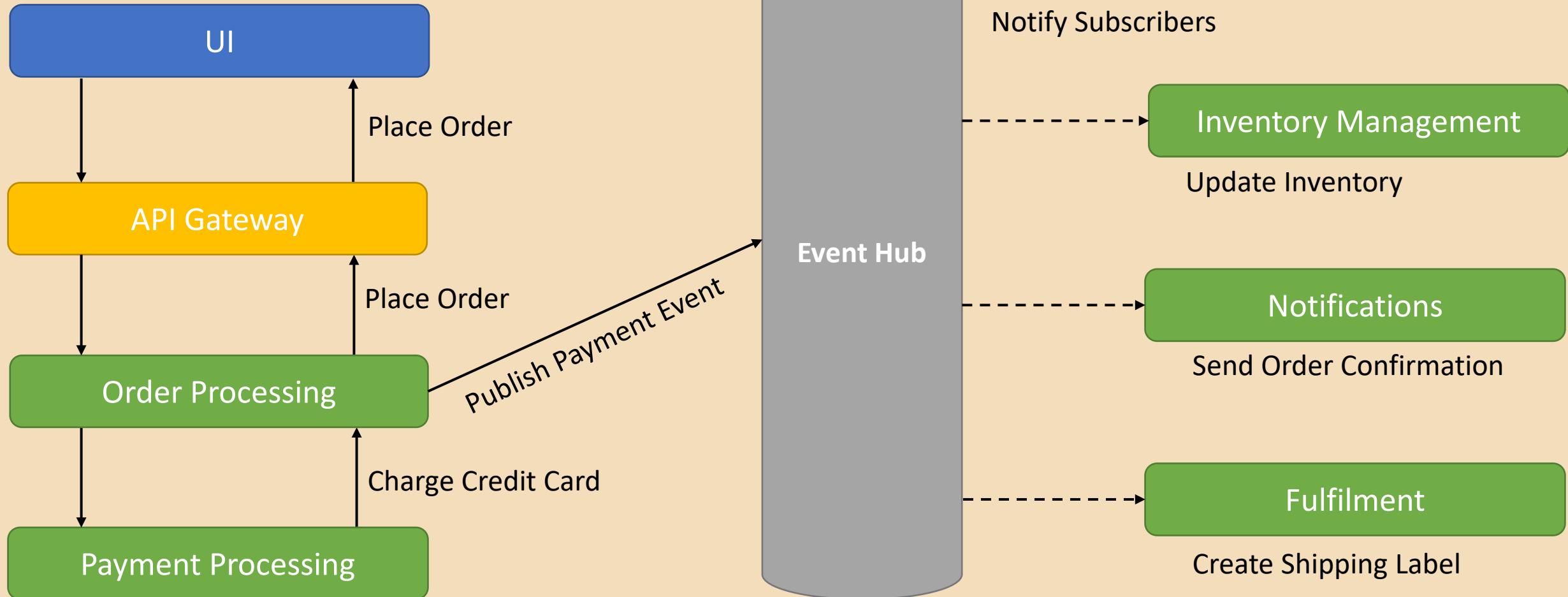
## Event Receivers

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

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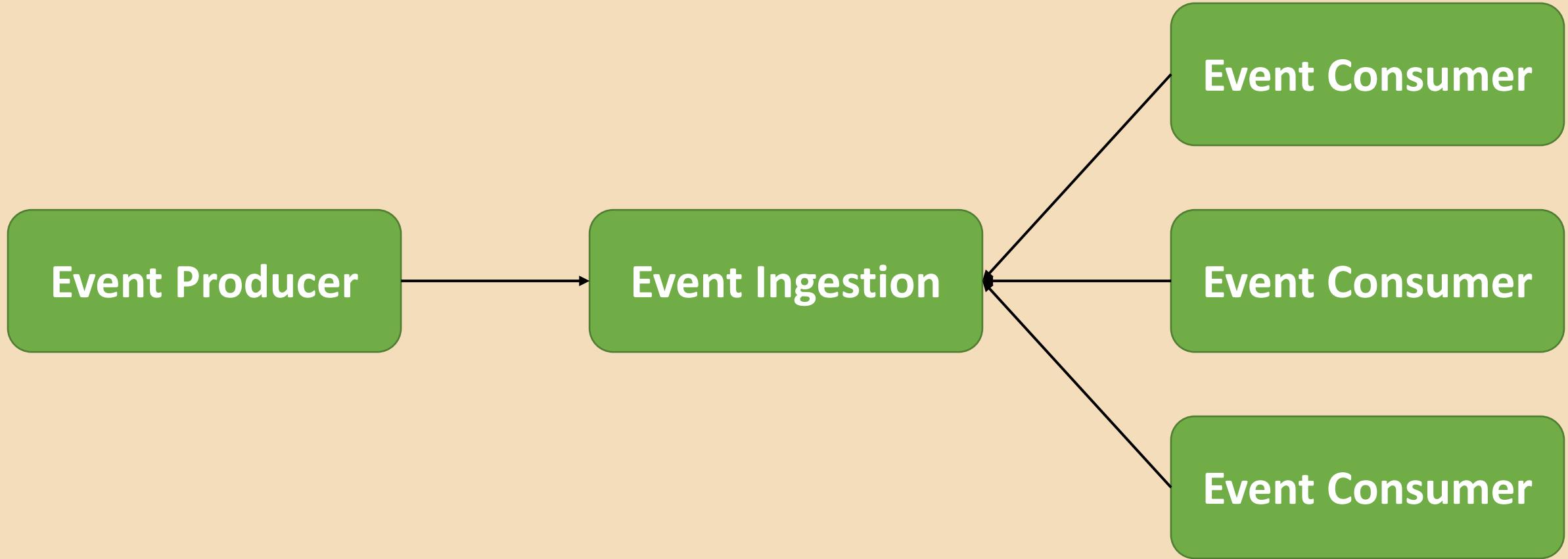
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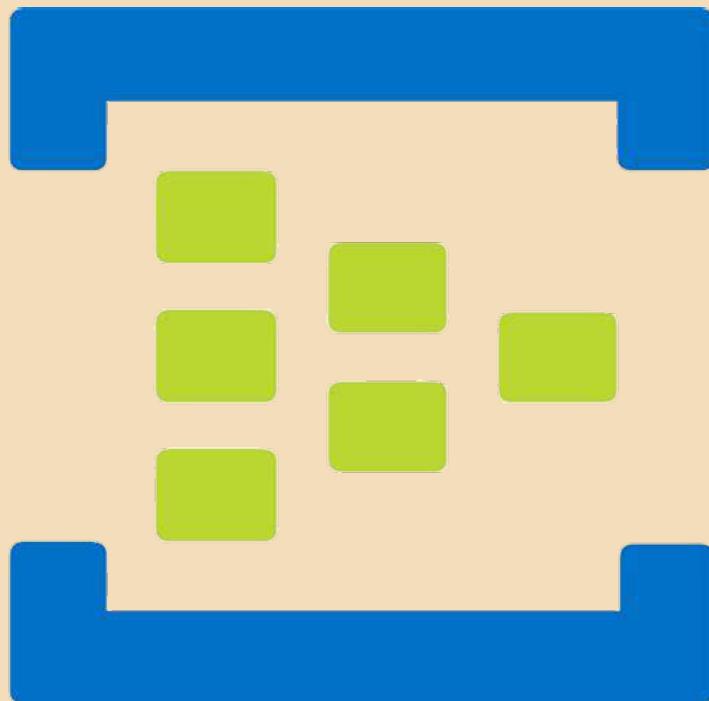
# Event-Driven Architecture

## 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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