

# Build Event Driven Architectures with the AWS CDK

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CDK Day - Track 2 - Build Event Driven Architectures with the AWS CDK

## Why an Event Driven Architecture ?

BUILDING EVENT-DRIVEN ARCHITECTURES ON AWS

### The Fallacies of Distributed Computing

- The network is reliable
- Latency is zero
- Bandwidth is infinite
- The network is secure
- Topology doesn't change
- There is one administrator
- Transport cost is zero
- The network is homogenous



## Coupling



Coupling is a measure of independent variability between connected systems.

Decoupling has a cost, both at design and run-time.

Coupling isn't binary.

Coupling isn't one-dimensional.



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Source: [EnterpriseIntegrationPatterns.com](https://enterpriseintegrationpatterns.com)

**“The appropriate level of coupling depends on the level of control you have over the endpoints”**

Gregor Hohpe

*Enterprise Integration Patterns*

## What is an Event Driven Architecture ?

### What is an event?

```
{
  "source": "com.orders",
  "detail-type": "PizzaBaked",
  "detail": {
    "metadata": {
      "idempotency-key": "c1b95b88",
      "callbackToken": "897bfeojnwj",
    },
    "data": {
      "order-id": "1073459984"
    }
  }
}
```

An event is a signal that a state has changed, events happen in the past and are strictly immutable and can't be changed.

## Start with business events

OrderCreated



PizzaPrepared

PizzaBaked



OrderDispatched

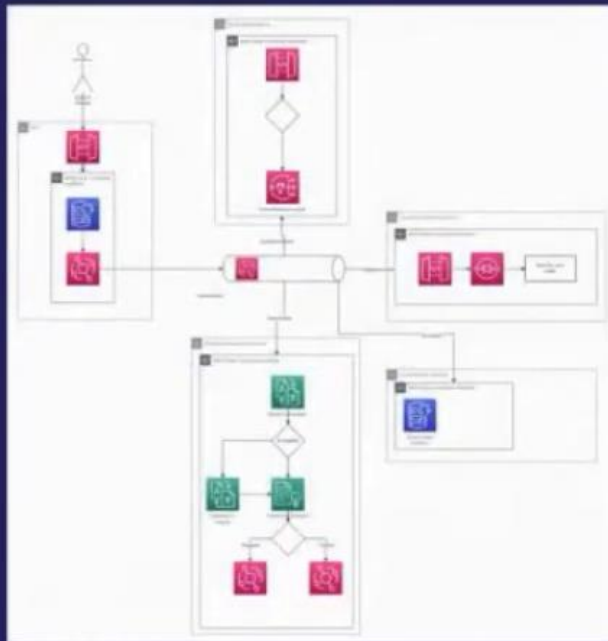


PaymentReceived



## Lets Build!

BUILDING EVENT-DRIVEN ARCHITECTURES ON AWS



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Let us build a set of services to help analyze the sentiments in our reviews. We have a FE UI service to receive the reviews, a BE Analysis service to perform the sentiment analysis, it will publish an event about the result, a message then gets sent back to the reviewer thanking them for their review OR trigger a customer service workflow for a negative review. We also have an Audit service that tracks all the events within the system. This system will have NO Lambda function and will be totally serverless, event-driven.

