LATAM EDA Roadshow

Mexico – March Ok
Colombia – April OK
Brazil – June In progress
Chile - October

EDA Enabling Business

Jaime Nagase
Sr. AppMod GTM Specialist for LATAM
AppMod = Serverless + Containers

Agenda

When?	What and Who?		
8:30 am	Breakfast		
9:00 am	Kickoff - Welcome	WWSO LATAM AppMod	Jaime Nagase
9:45 am	Thinking Asynchronously	WWSO Core Services	Rebekah Kulidzan
10:30 am	Building event-driven architectures on AWS	WWSO SA / TFC	Ricardo Marques
11:15 am	Serverlesspresso presentation and demo	WWSO (App Int) SA	Bianca Mota
12:00 pm	Lunch		
2:00 pm	Workshop: Serverlesspresso workshop	WWSO (App Int) SA/TFC/ DA	Rafael Barbosa

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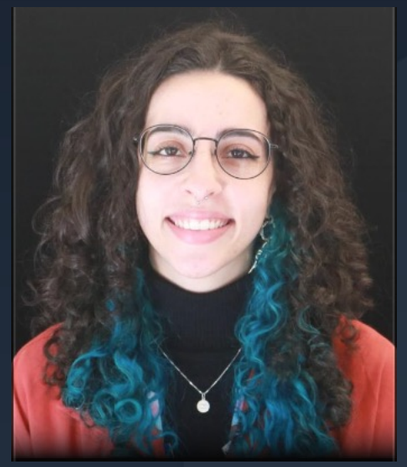
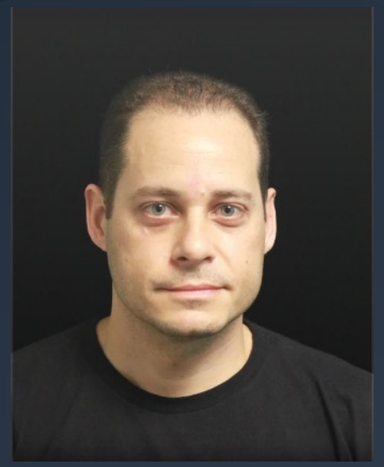
But who?



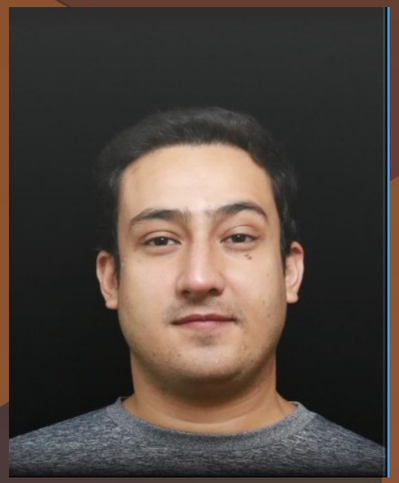
Bianca Mota



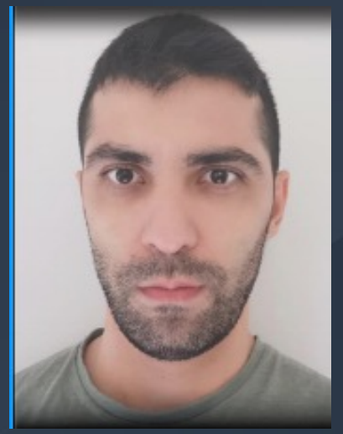
Ricardo Marques

Rafael Barbosa

Rebekah Kulidzan



Peterson Larentis



Gabriel Leite

Leticia Dornelas

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BDM? GTM?

Jaime Nagase, 37 years-old, 2 kids, #VaiCurintia

- EDS, HP, Cielo, Itaú, e Porto Seguro, AWS
- Operation Manager, Project Team Manager, and Head de Cloud e DevOps

- AWS Role = BDM or GTM?

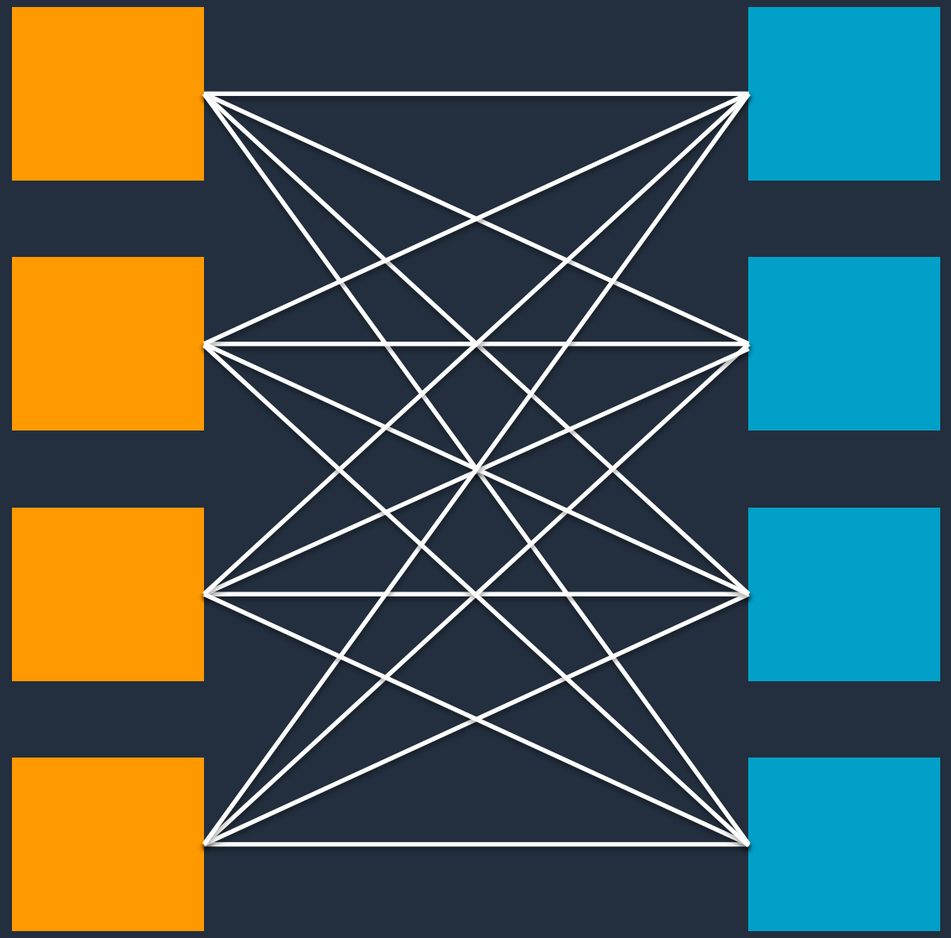
- Create and leverage all channels to connect SA's to Customers
- Helps account teams to break down barriers
- Streamline the allocation of the TFC team to quickly resolve customer issues
- Promote channels for SA's content to reach the customer
- Negotiate PPA pricing
- Assist in the prioritization of Features
- A faster connection between Account Team and Service Team
- ETC...

Ok, lets start talk about EDA!

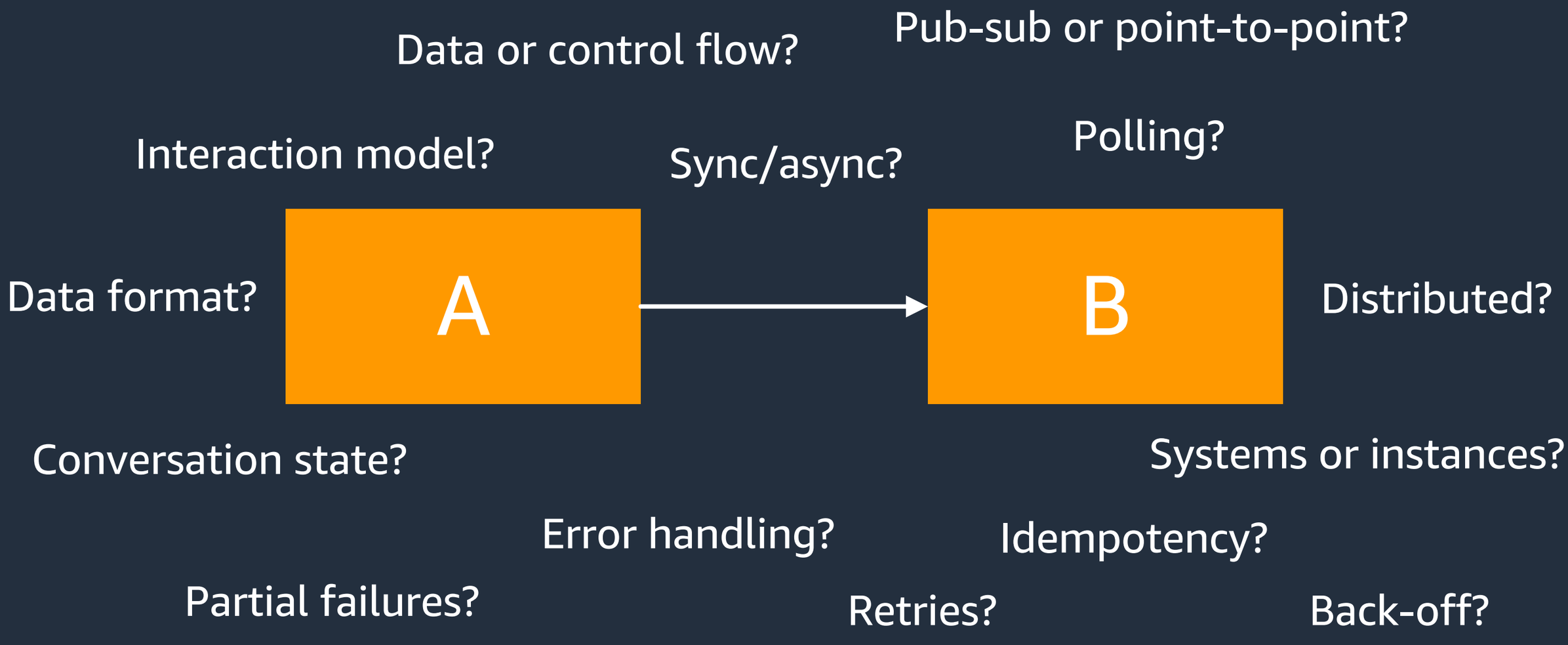
Connecting Systems

Tightly coupled architectures are easy to get started with…

…but complexity multiplies at scale



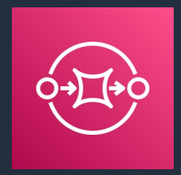
Connecting two systems. How hard can it be?



Separate your architecture from your product choice

Most products combine several aspects






- Message-oriented	X	X	X	X
- Asynchronous	X	X	X	X
- Publish-subscribe	X	X		
- Events	X	X		
- Event-driven	?	?		
- Distributed	X	X	X	X

Note: for discussion purposes only. Not a product feature matrix.

How your components are interconnected defines your system's essential properties

- Can each component scale and fail independently?
- Are upstream systems waiting on slow responses from downstream ones?
- Do interdependent teams need to tightly coordinate to launch new features?
- How do you handle failures and retries?
- How do you integrate SaaS application events?

Why build event-driven architectures?

Why build event-driven architectures?

Fault tolerance

Scalability

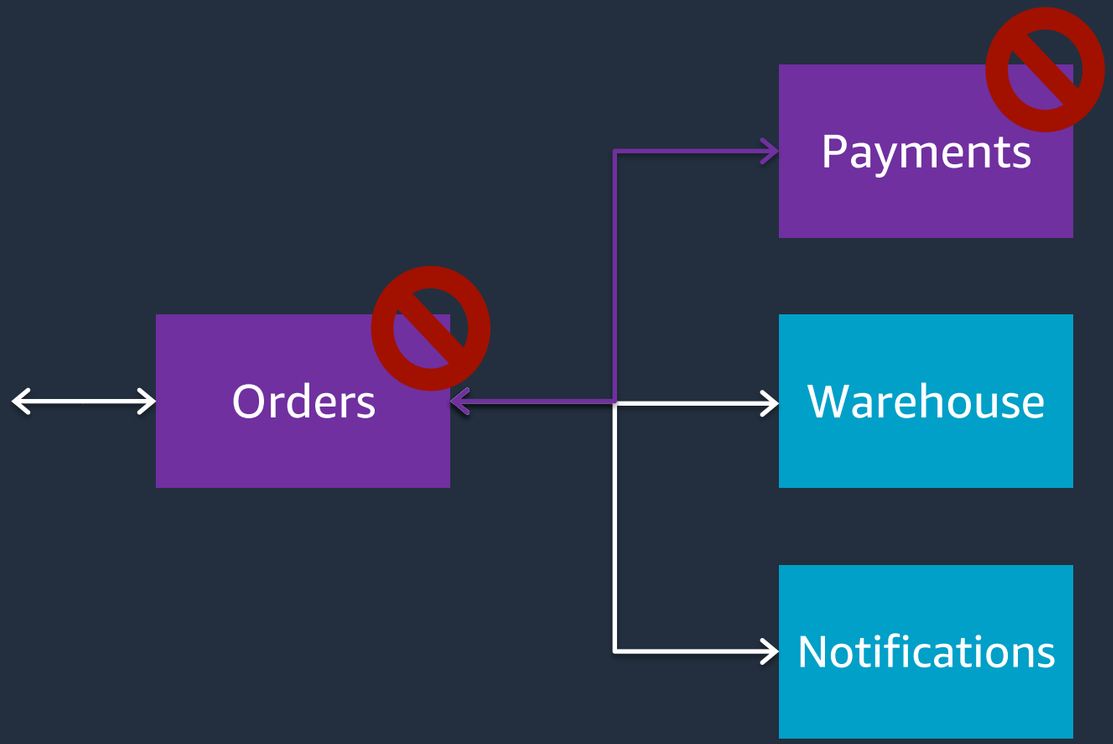
Extensibility

Agility

Sample Coupling Architecture

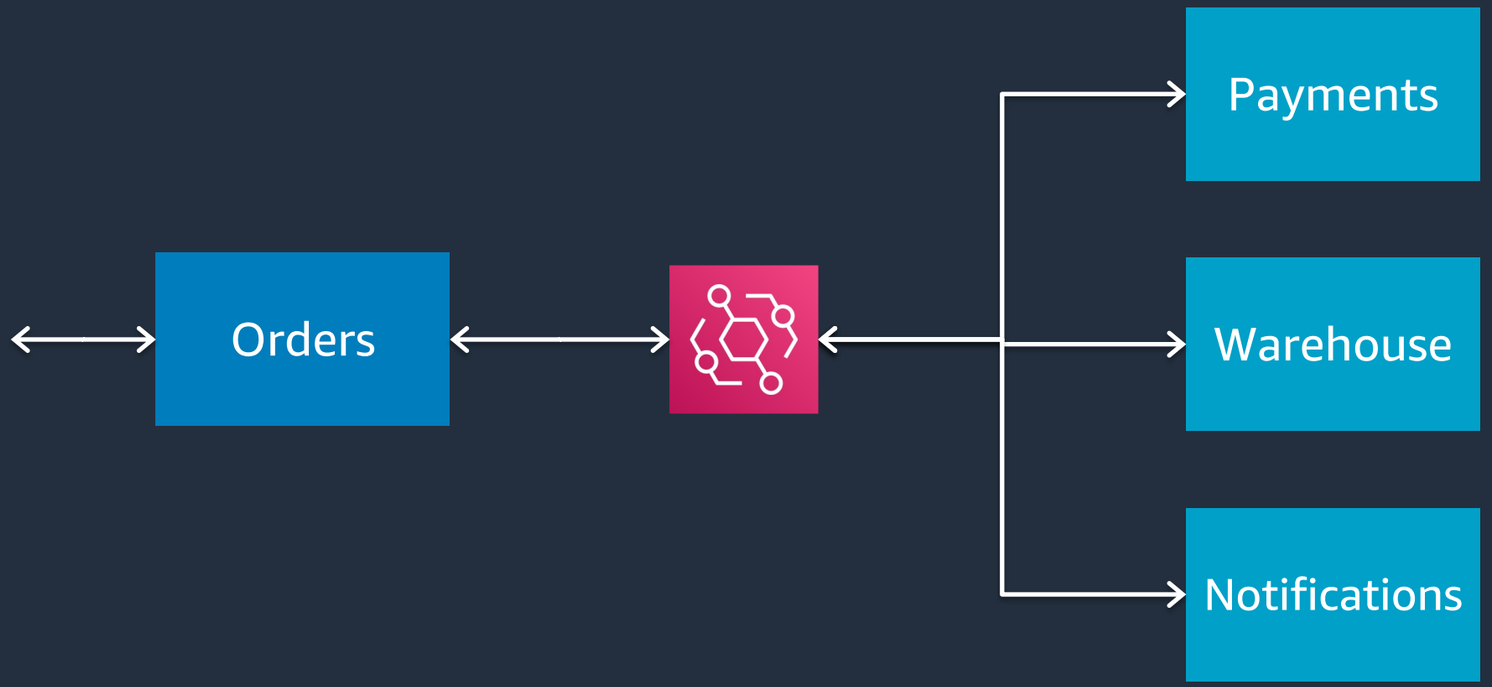
Sample Coupling Architecture

Fault tolerance



Sample Decoupling Architecture

Fault tolerance

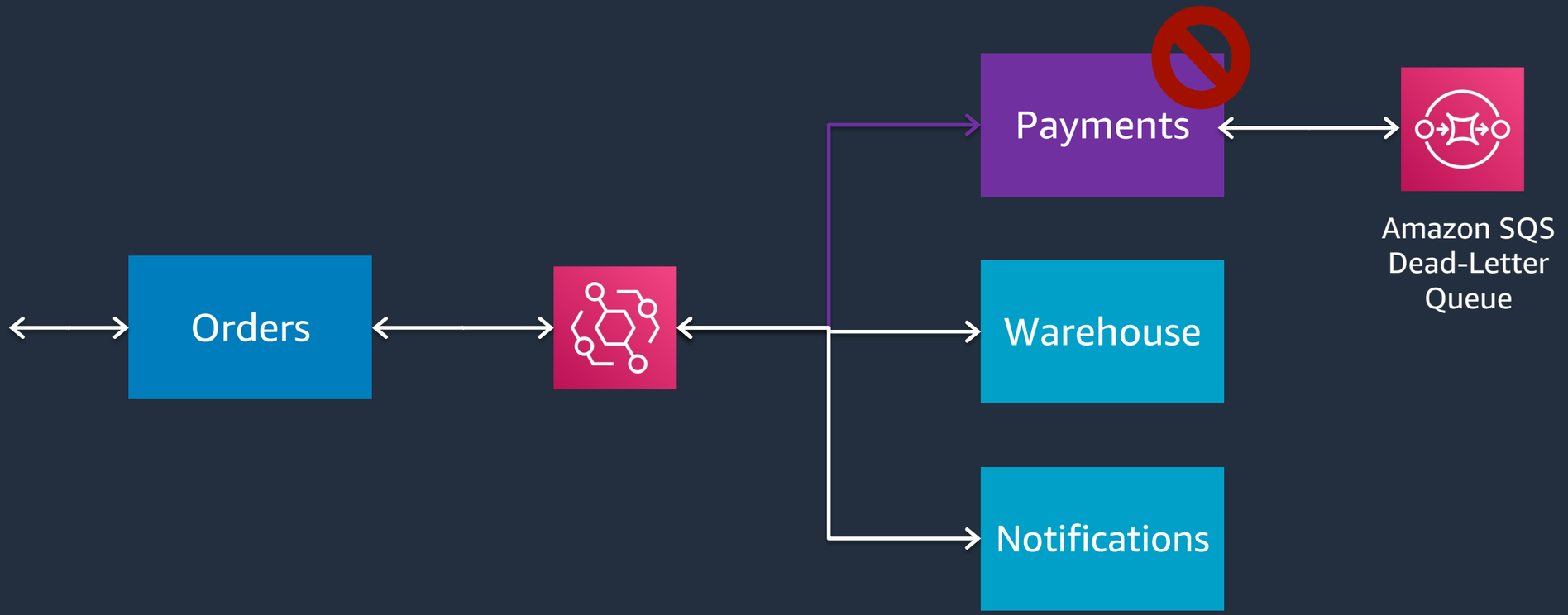


The orders service no longer has to wait for replies from all the other services.

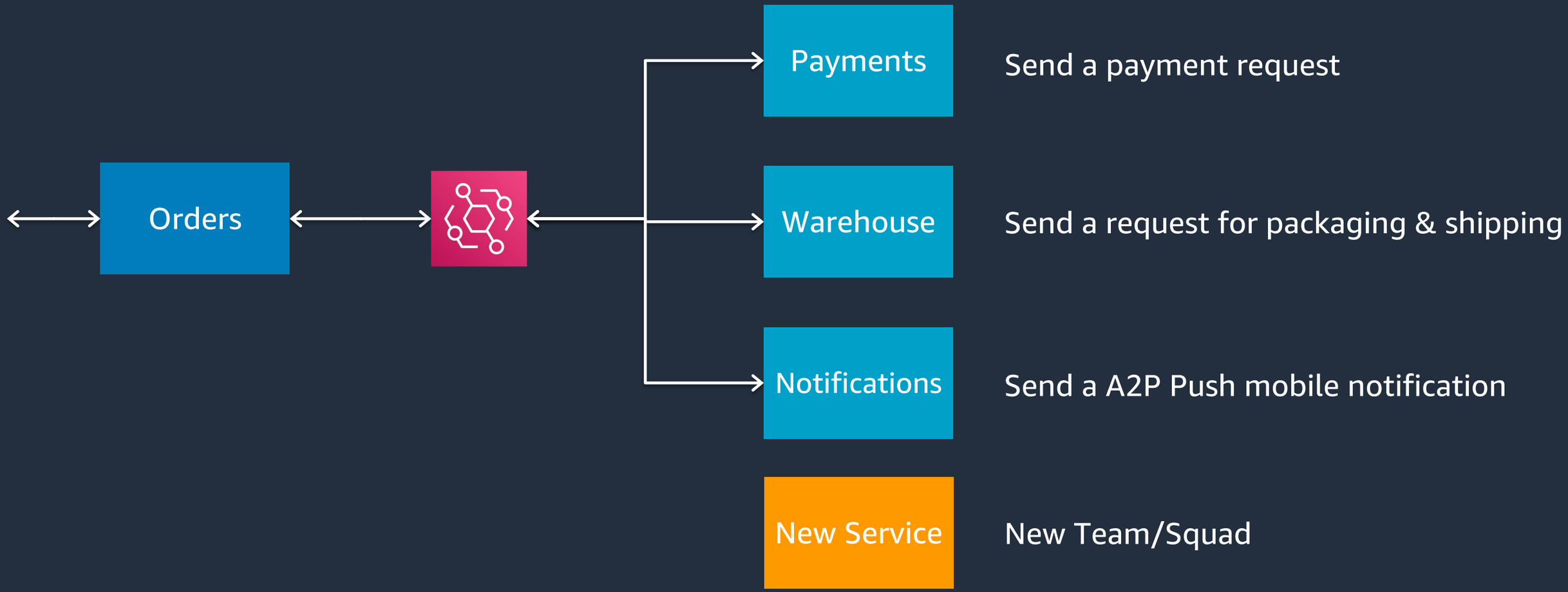
- Higher availability of the orders service
- Lower latency for end users
- No more cascading failures

Sample Decoupling Architecture

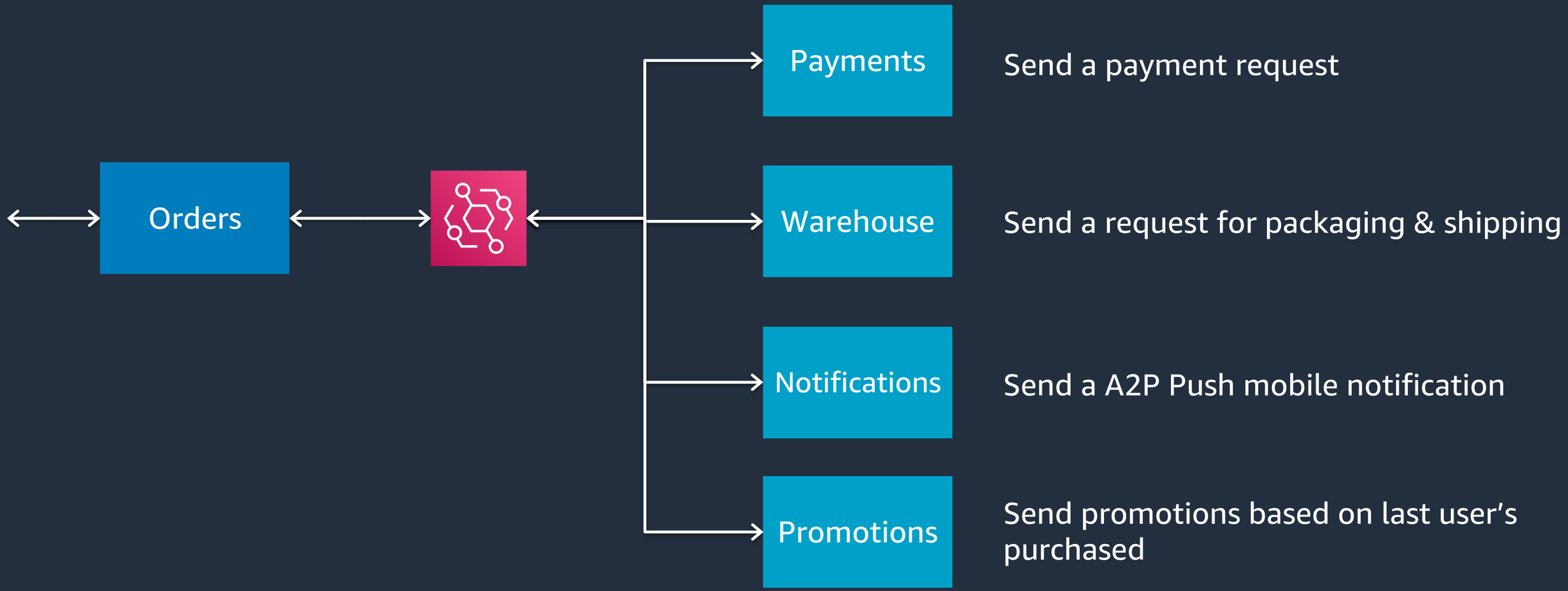
Fault tolerance



Sample Decoupling Architecture (new service)

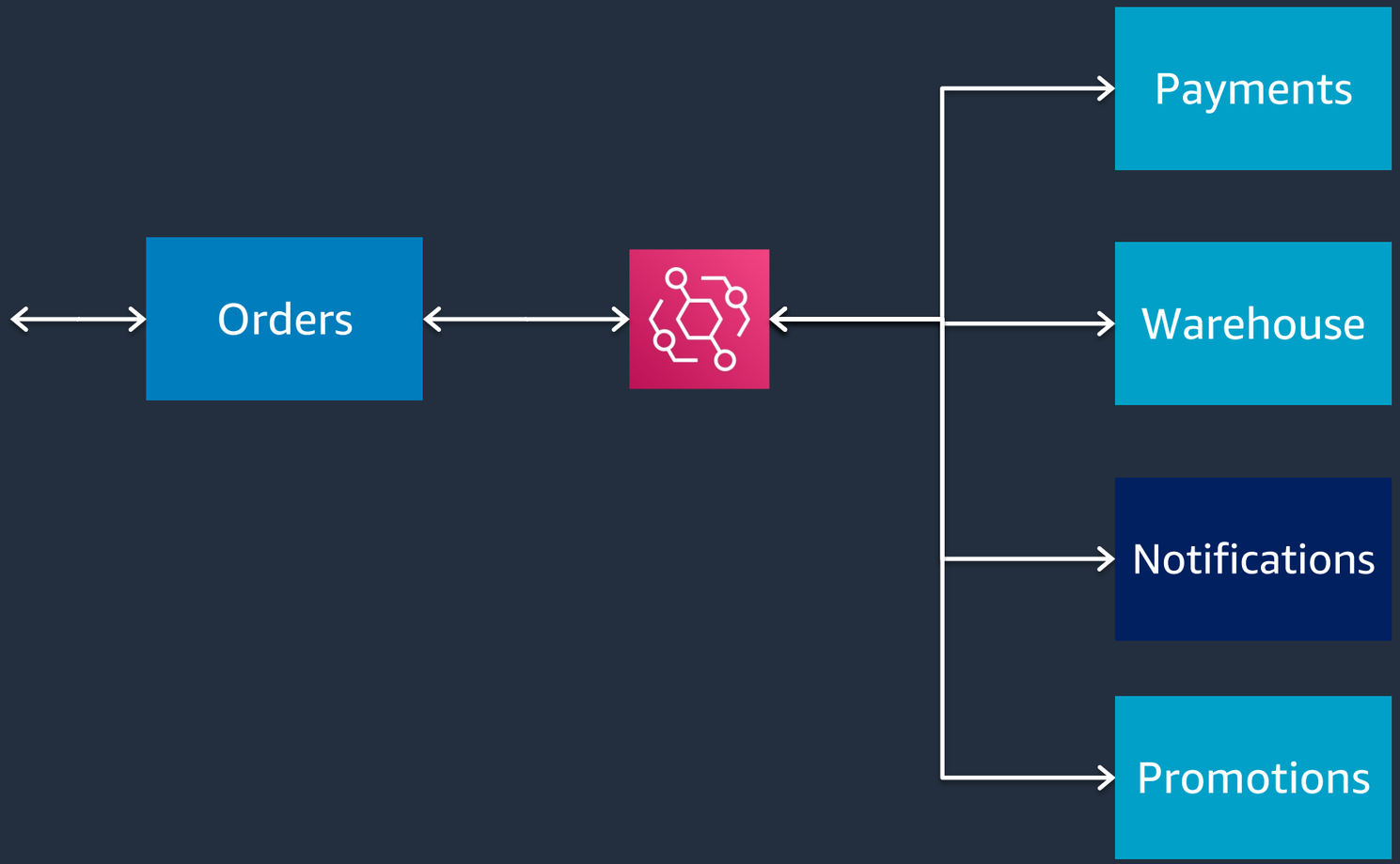


Sample Decoupling Architecture (new service)



Sample Decoupling Architecture

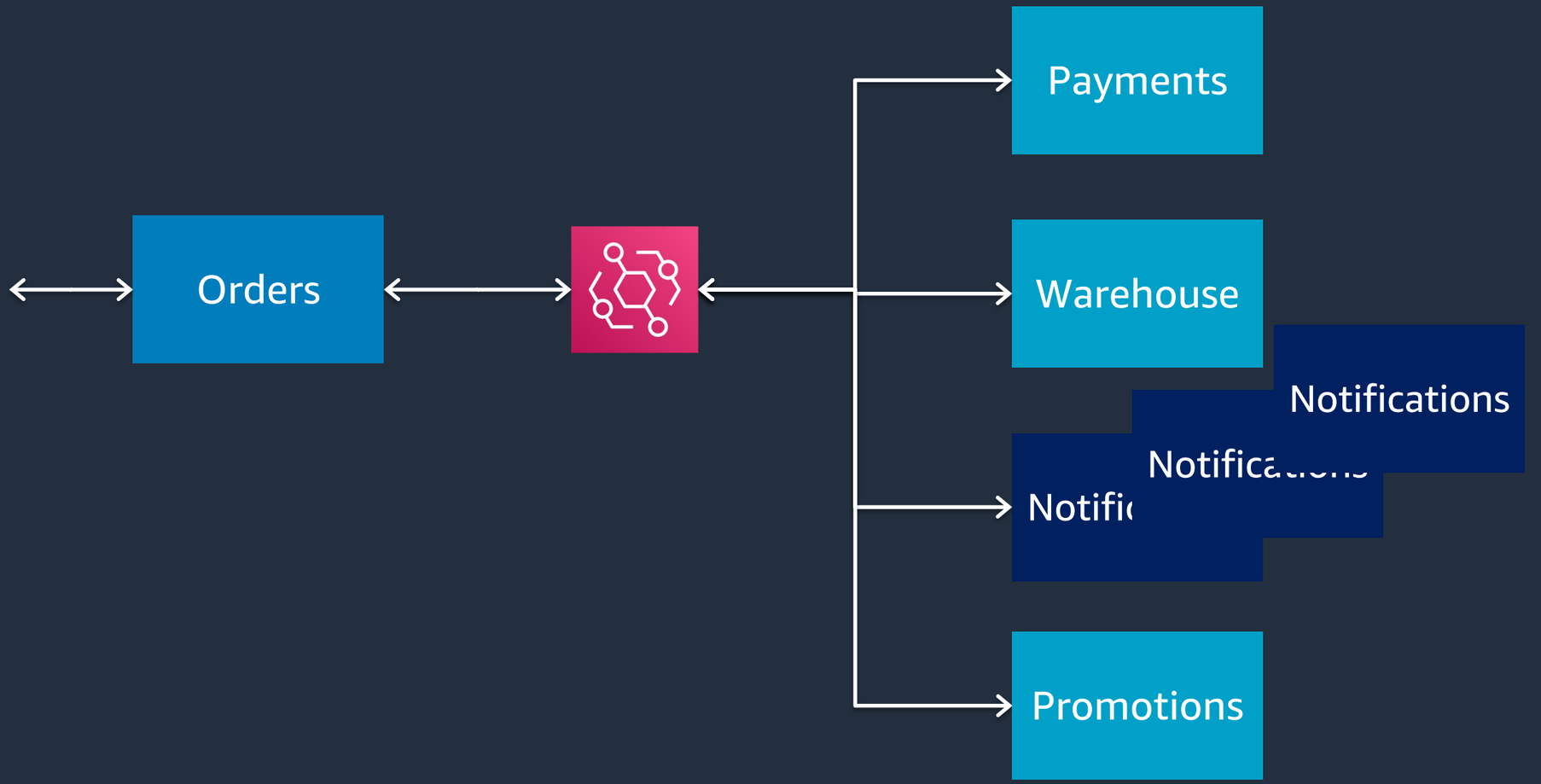
Scalability



Needs to Scale Out

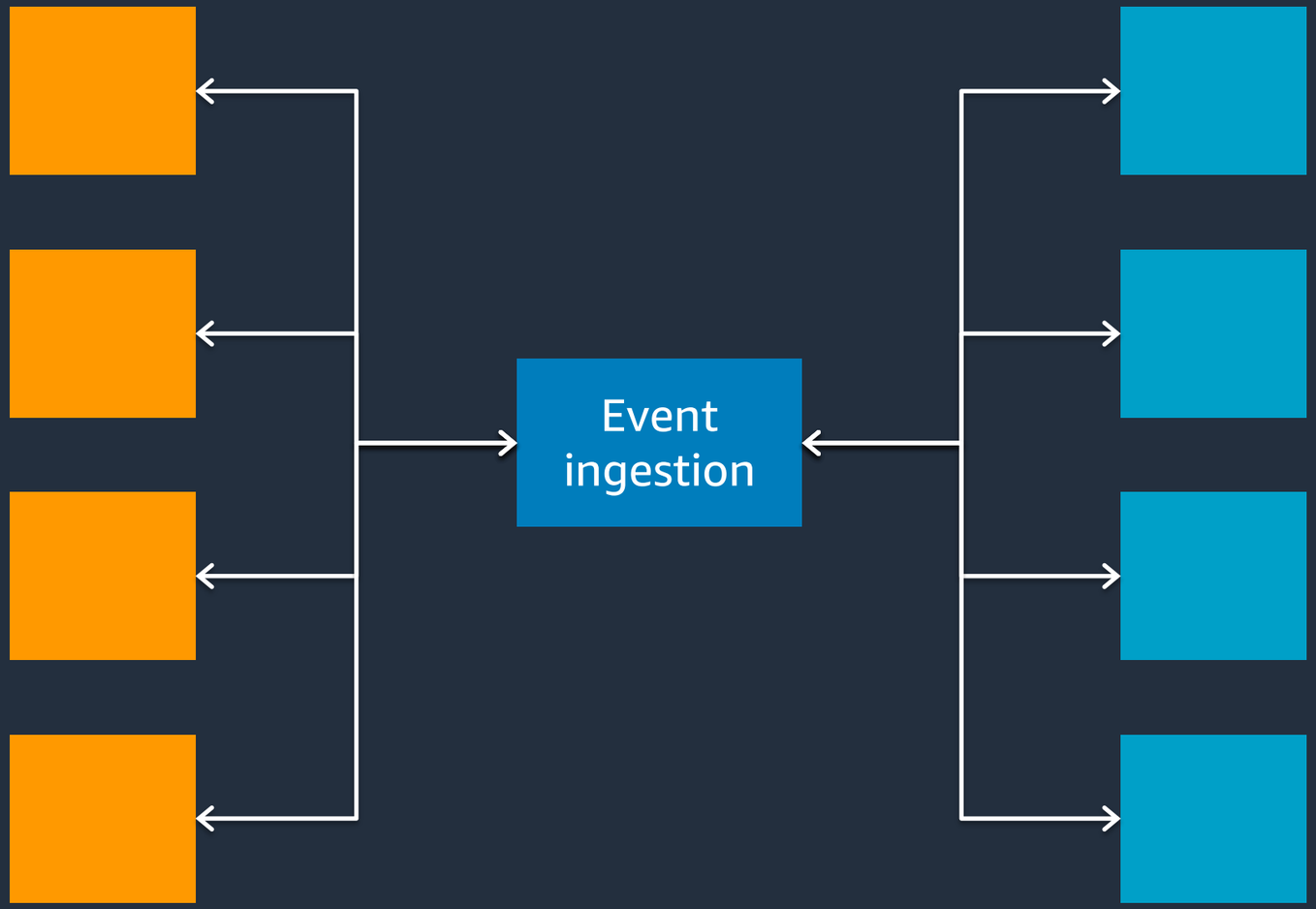
Sample Decoupling Architecture

Scalability



Just Notifications Service is scalling, not the entire system

Decoupled event-driven architectures allow for resilient applications and rapid feature development



Event ingestion

Event router

Filters and routes events and pushes events to subscribed consumers

Event stream

Continuous stream of events that consumers can pull events from

What AWS services can you use to build event-driven architectures?

An event-driven architecture consists of three parts:

Event producer

Publishes events (ex, web or mobile apps, microservices, IoT devices)

Event ingestion

Event consumer

Processes events (ex, update database, send notification, run ML analysis)

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Event producers


Amazon Simple Storage Service (S3)


Amazon API Gateway


Amazon DynamoDB


AWS Lambda


AWS AppFlow


Amazon Redshift


Amazon Translate


AWS Step Functions

Any of the 200+ AWS services that produce events, or your own custom events


AWS Batch


Amazon Elastic Container Service

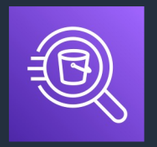

AWS Glue


Amazon EC2 Auto Scaling

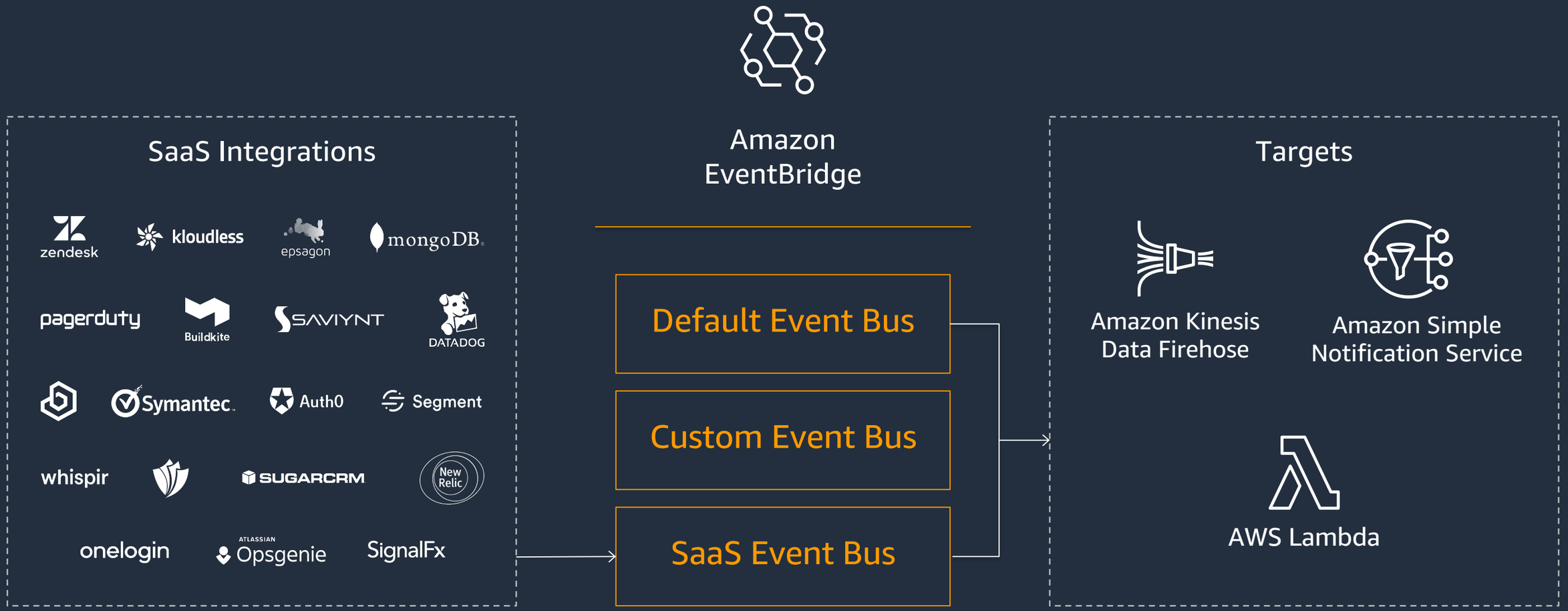

Amazon CloudWatch


AWS IoT Greengrass

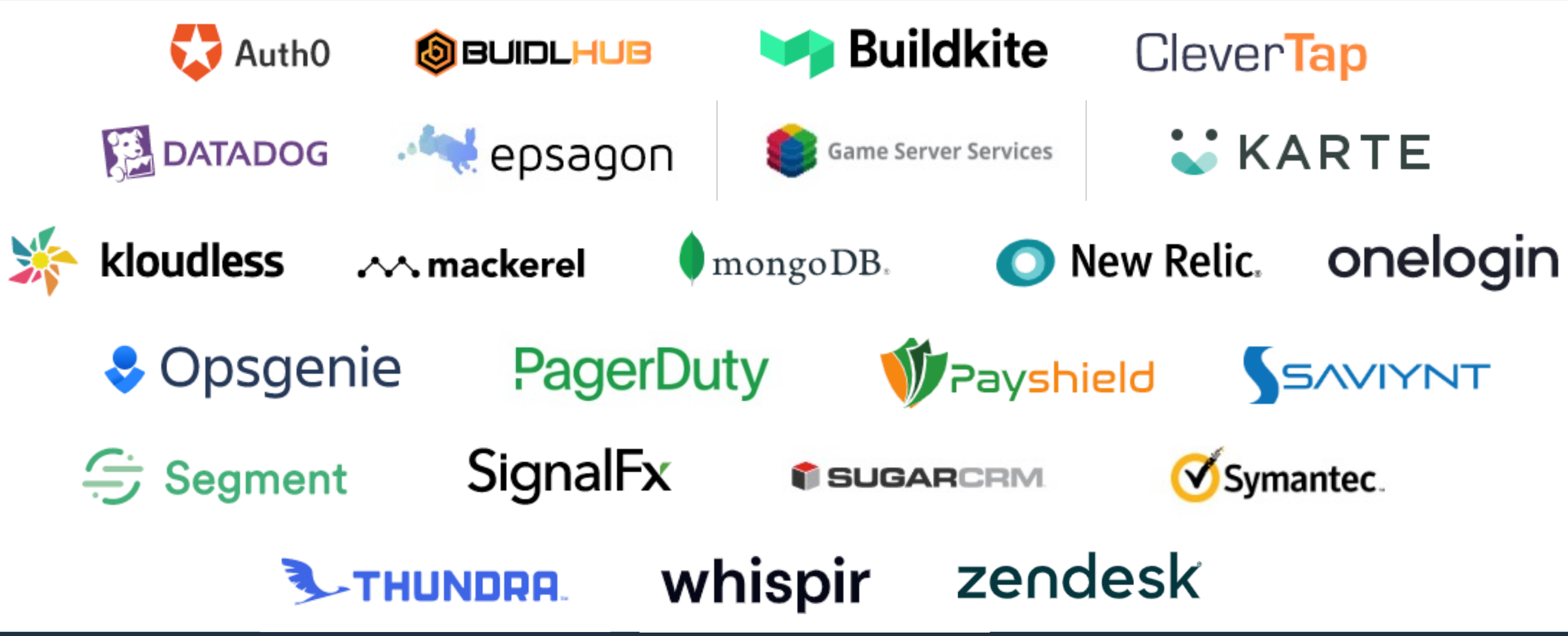

Amazon Managed Blockchain


Amazon Athena

Receive SaaS events through Amazon EventBridge



Over 42 Amazon EventBridge SaaS Integrations



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Comparing event ingestion services: Operations

Comparing event ingestion services: Ordering

Event order guaranteed

Amazon MQ

Amazon Kinesis Data Streams

Amazon SQS FIFO

Amazon MSK

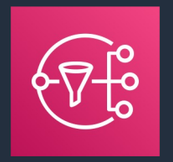
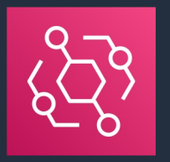
Event order not guaranteed

Amazon EventBridge

Amazon SNS

Amazon SQS

Event ingestion

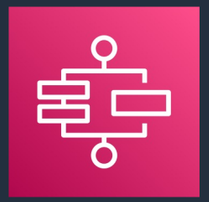
	Event Store		Event Router	
	Queues	Streams	Topics	Event Bus
AWS native	 Amazon SQS	 Amazon Kinesis	 Amazon SNS	 Amazon EventBridge
Managed open source	 Amazon MQ	 Amazon MSK	 Amazon MQ	

Event consumers

Serverless services:

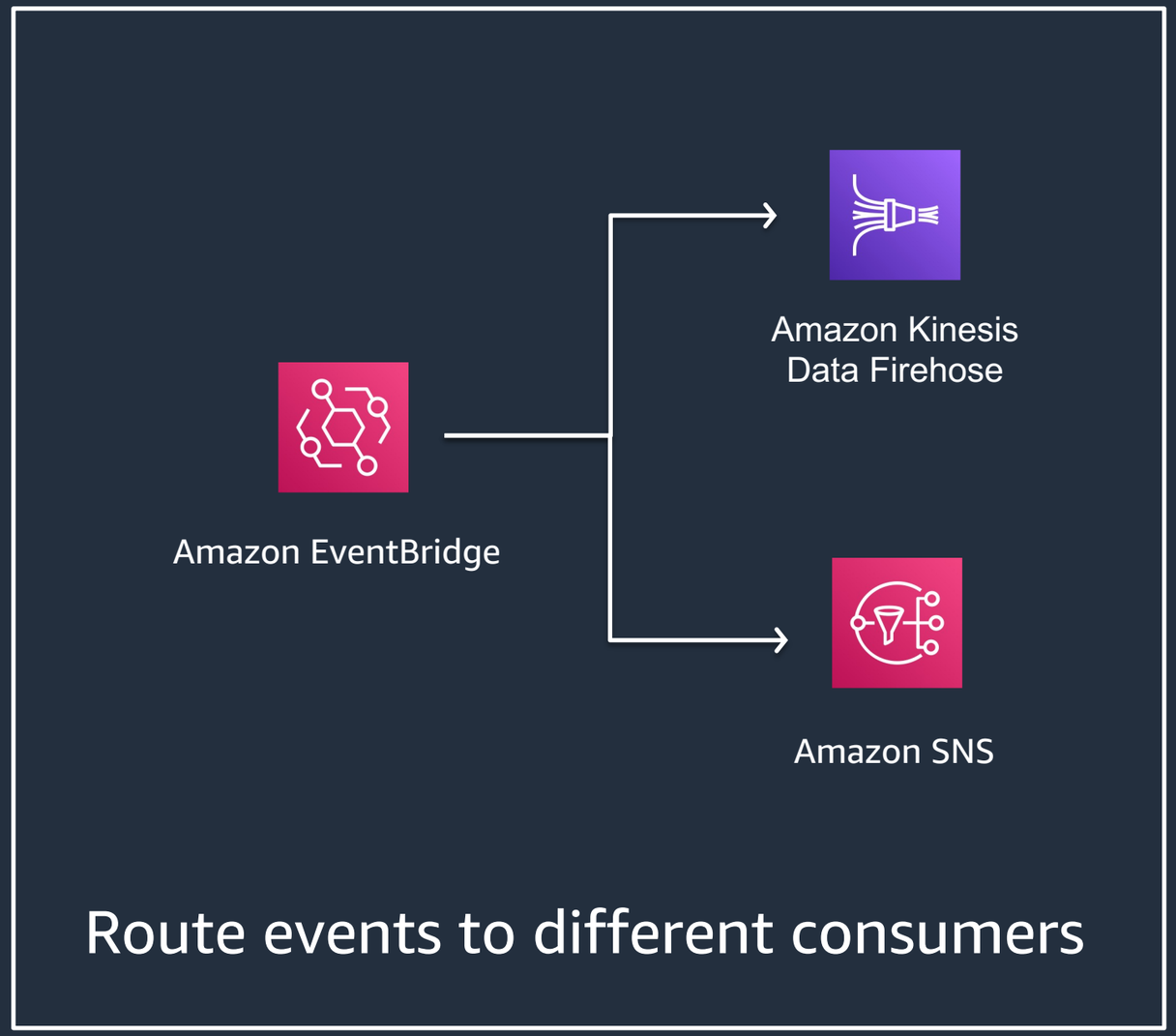
- Have native integrations with event services.
- Only run when there are events to process.
- Scale up and down automatically as event volume changes.

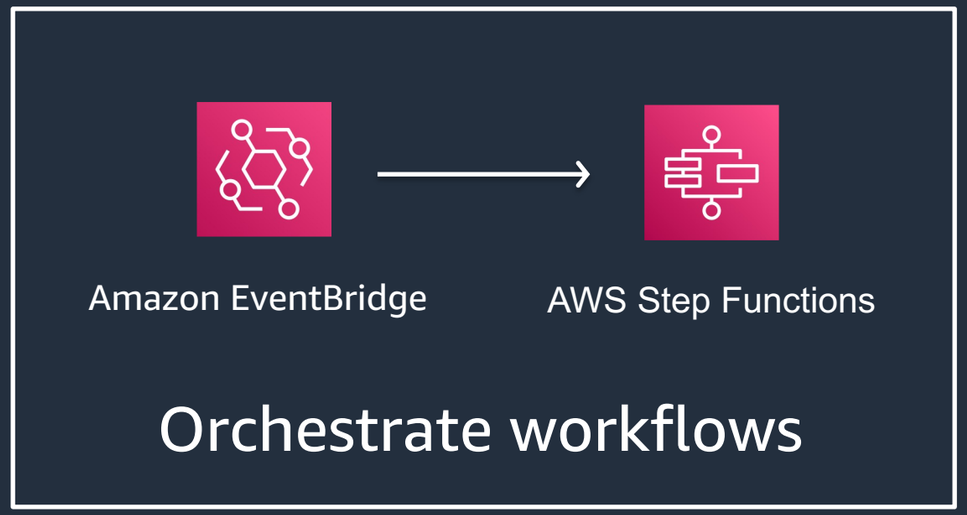
Invoke a Lambda function to process the event or send to another AWS service

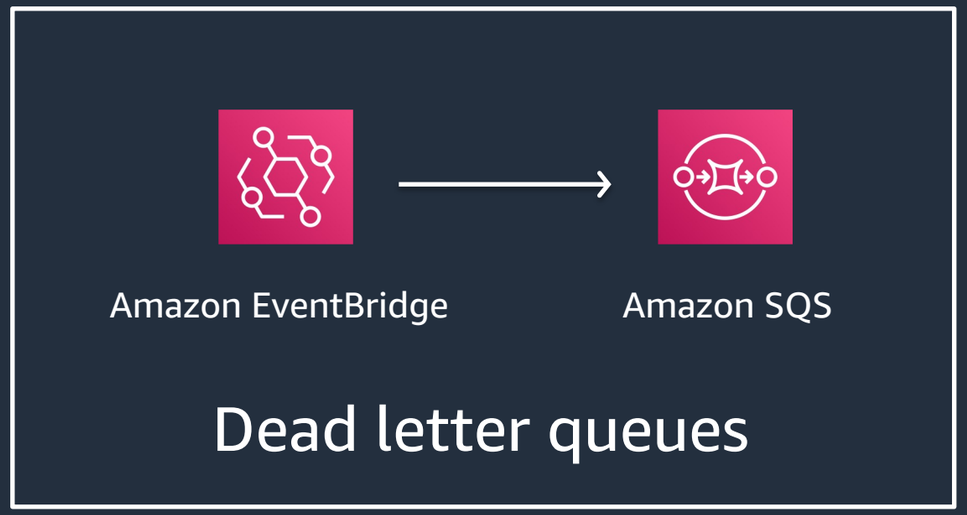


Trigger a Step Functions workflow

Combine event services for your use case







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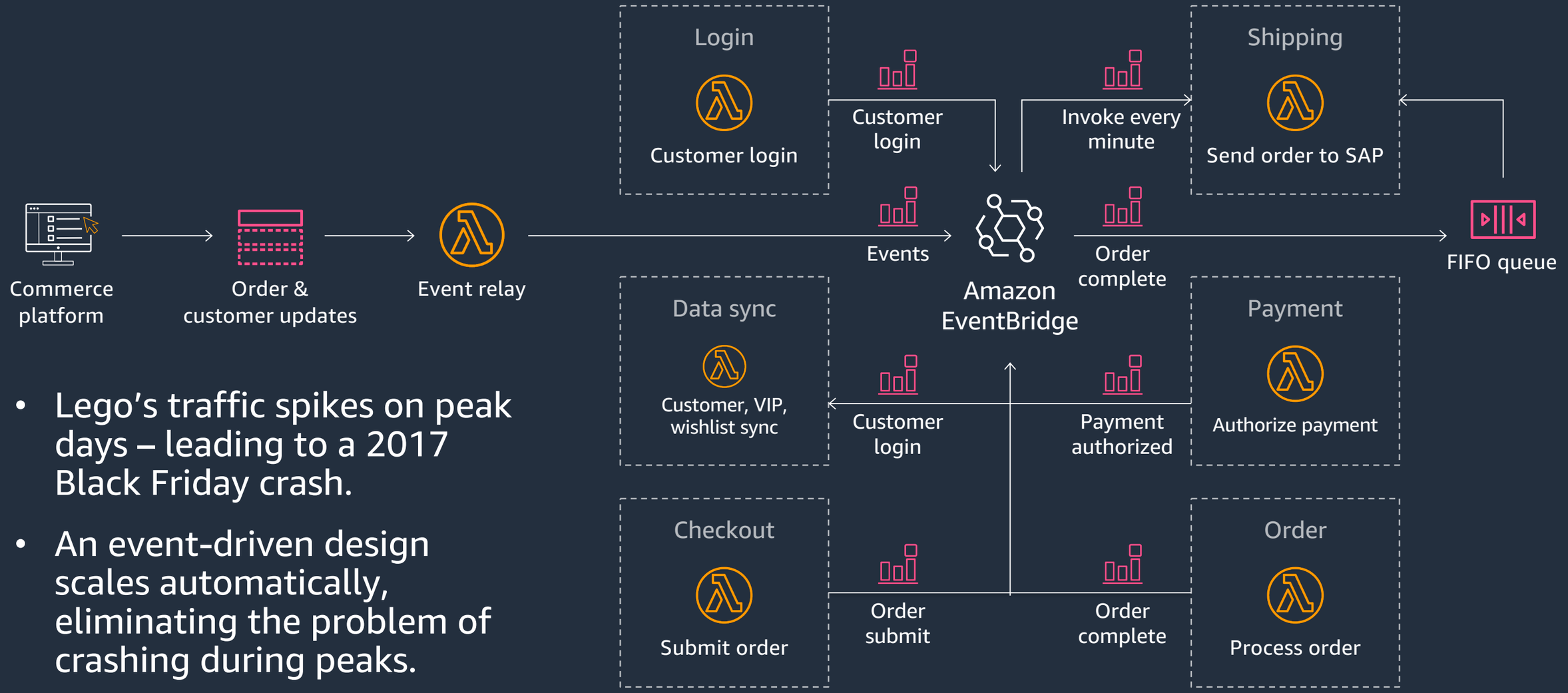
Amazon EventBridge targets

- AWS Lambda
- Amazon Kinesis
- AWS Step Functions
- Amazon API Gateway
- Amazon Redshift
- Amazon SNS
- Amazon SQS
- Amazon CloudWatch
- EventBridge event bus in a different account or region
- And more!

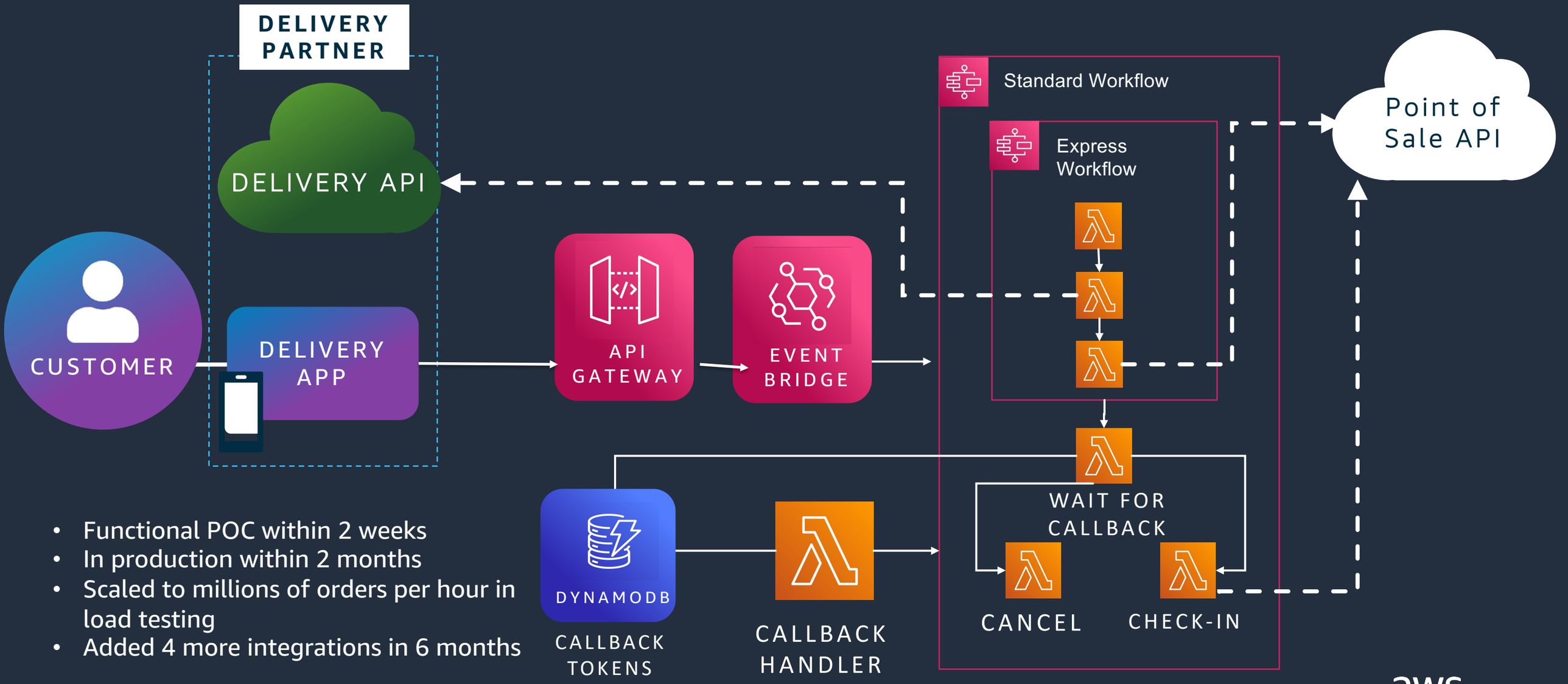
What are customers building with event-driven architectures?

Lego uses an event-driven design for scalability



- Lego's traffic spikes on peak days – leading to a 2017 Black Friday crash.
- An event-driven design scales automatically, eliminating the problem of crashing during peaks.

Taco Bell – Delivery partner order middleware solution



- Functional POC within 2 weeks
- In production within 2 months
- Scaled to millions of orders per hour in load testing
- Added 4 more integrations in 6 months

Resources

Talks:

- re:Invent 2021: Building next-gen applications with event-driven architectures
- re:Invent 2021: Building modern applications? Think integration

Tutorials:

- Serverless Land: Build Decoupled, Event-Driven Architectures
- AWS Skill Builder: Building Serverless Applications with an Event-Driven Architecture

Serverless Happy Hours – YouTube Channel

SCAN ME

Your Feedback is appreciated!

Thank You!

https://www.pulse.aws/survey/THUYOIXW

THANK YOU! Questions?