AWS
re:Invent
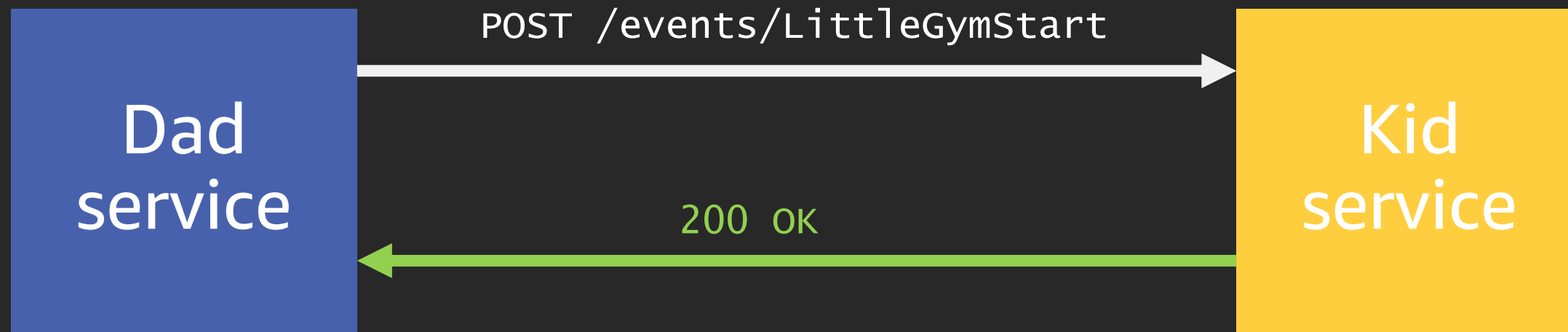
Building event-driven architectures faster than ever with Amazon EventBridge

Mike Deck
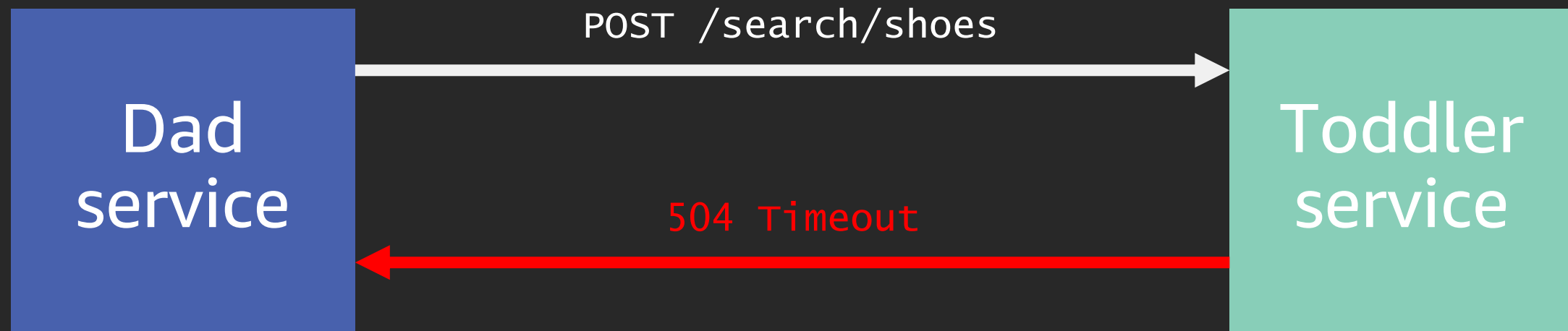
Principal Solutions Architect
Amazon Web Services

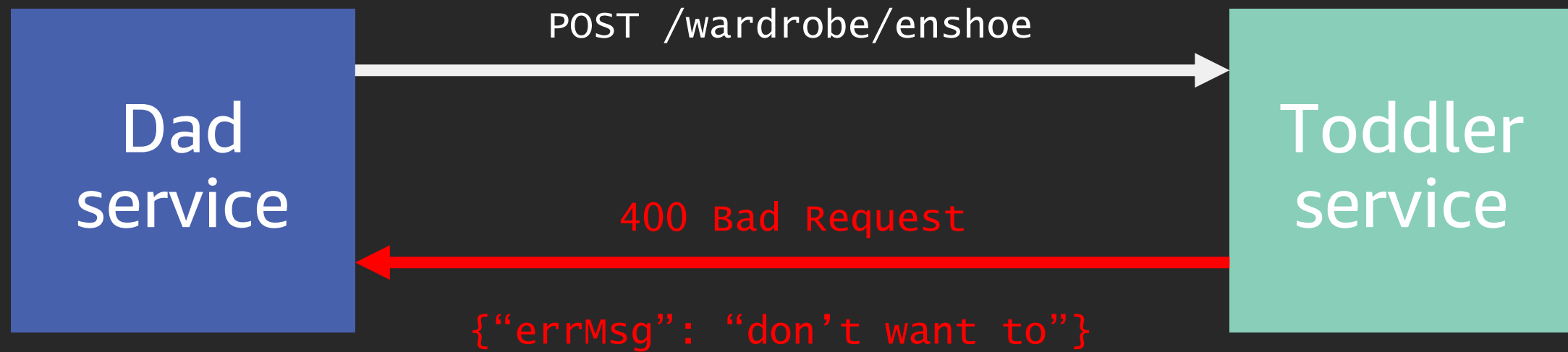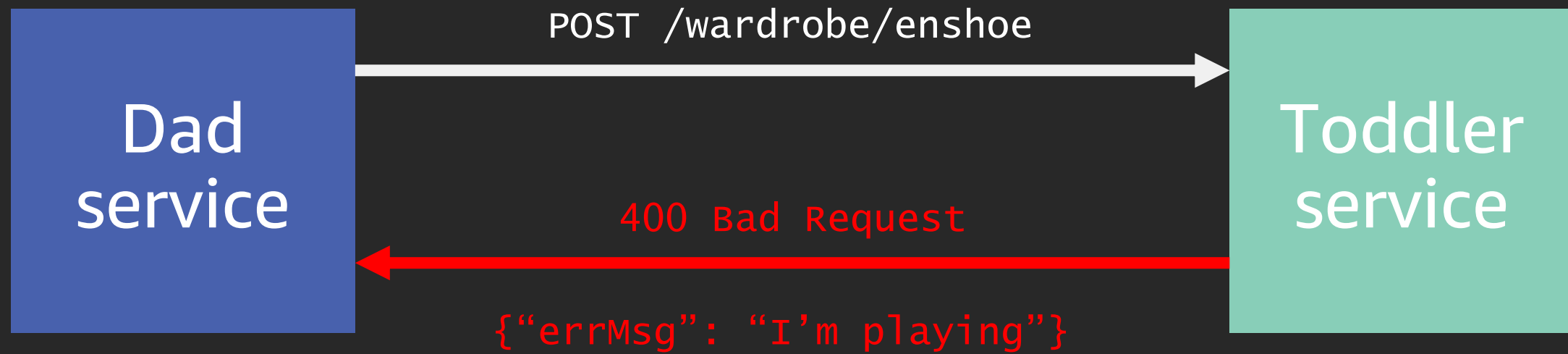# Event-driven kids

Dad service

POST /events/LittleGymStart

200 OK

Kid service

Event-driven kids

Event-driven kids

Dad service

POST /wardrobe/enshoe

400 Bad Request

{"errMsg": "don't want to"}

Toddler service

Event-driven kids

Dad service

POST /wardrobe/enshoe

400 Bad Request

{"errMsg": "I'm playing"}

Toddler service

Event-driven kids

Dad service

POST /wardrobe/enshoe

400 Bad Request

{"errMsg": "Noooooooooo"}

Toddler service

Event-driven kids

POST /wardrobe/enshoe

429 Too Many Requests

{"status": "tantrum"}

Dad service

Event-driven benefits

Scale and fail independently

Develop with agility

Audit with ease

Cut costs

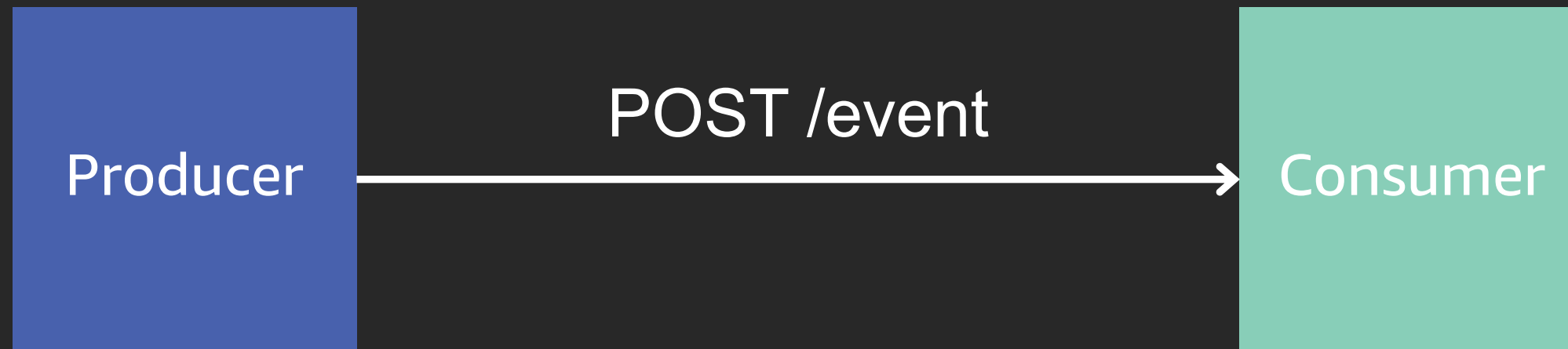# Start with the domain

AWS
re: Invent

aws

Event-driven models

Identify business events, processes, actors, etc.

Cluster-related concepts

Define bounded contexts and sub-domains

Pick an event router

AWS
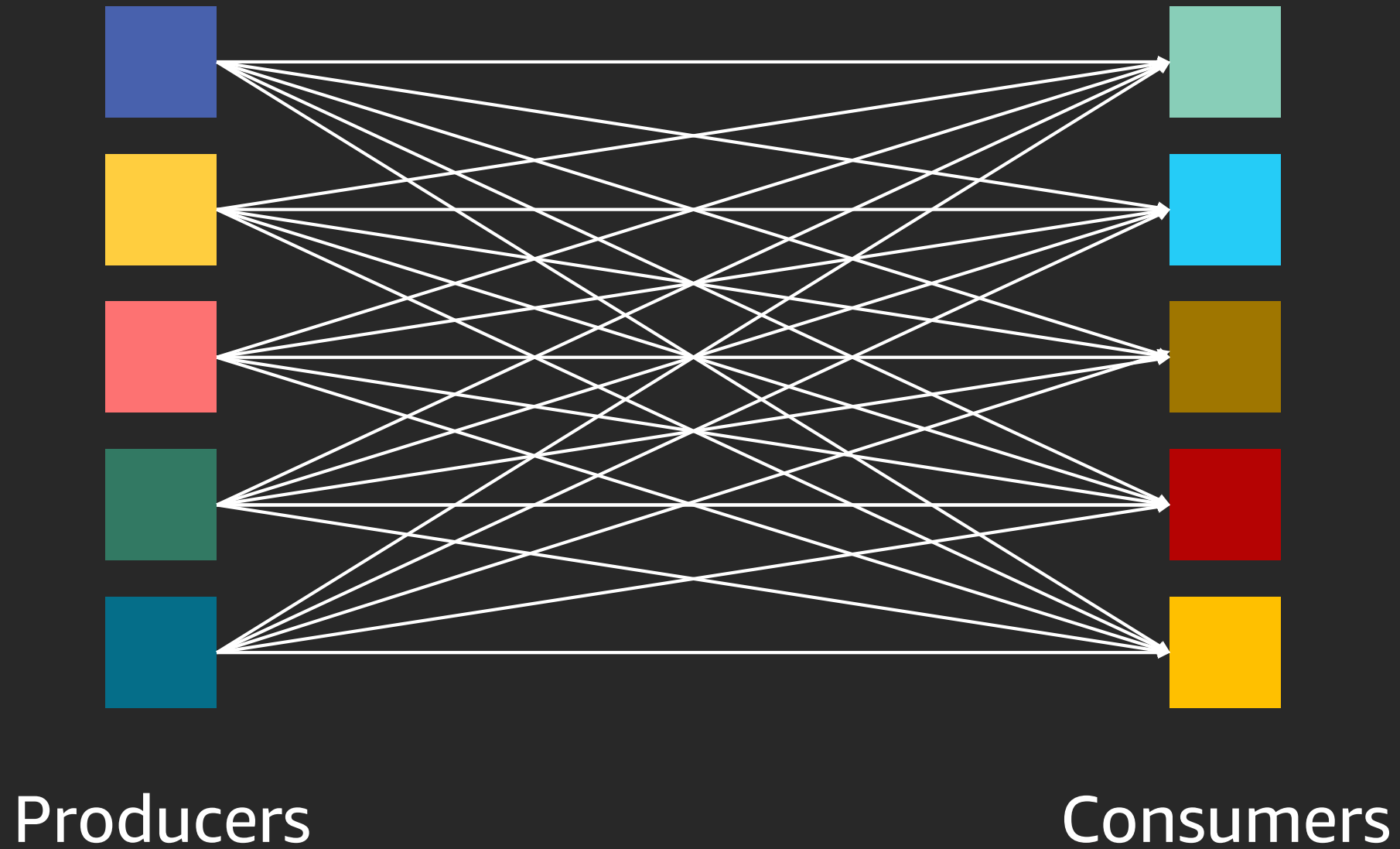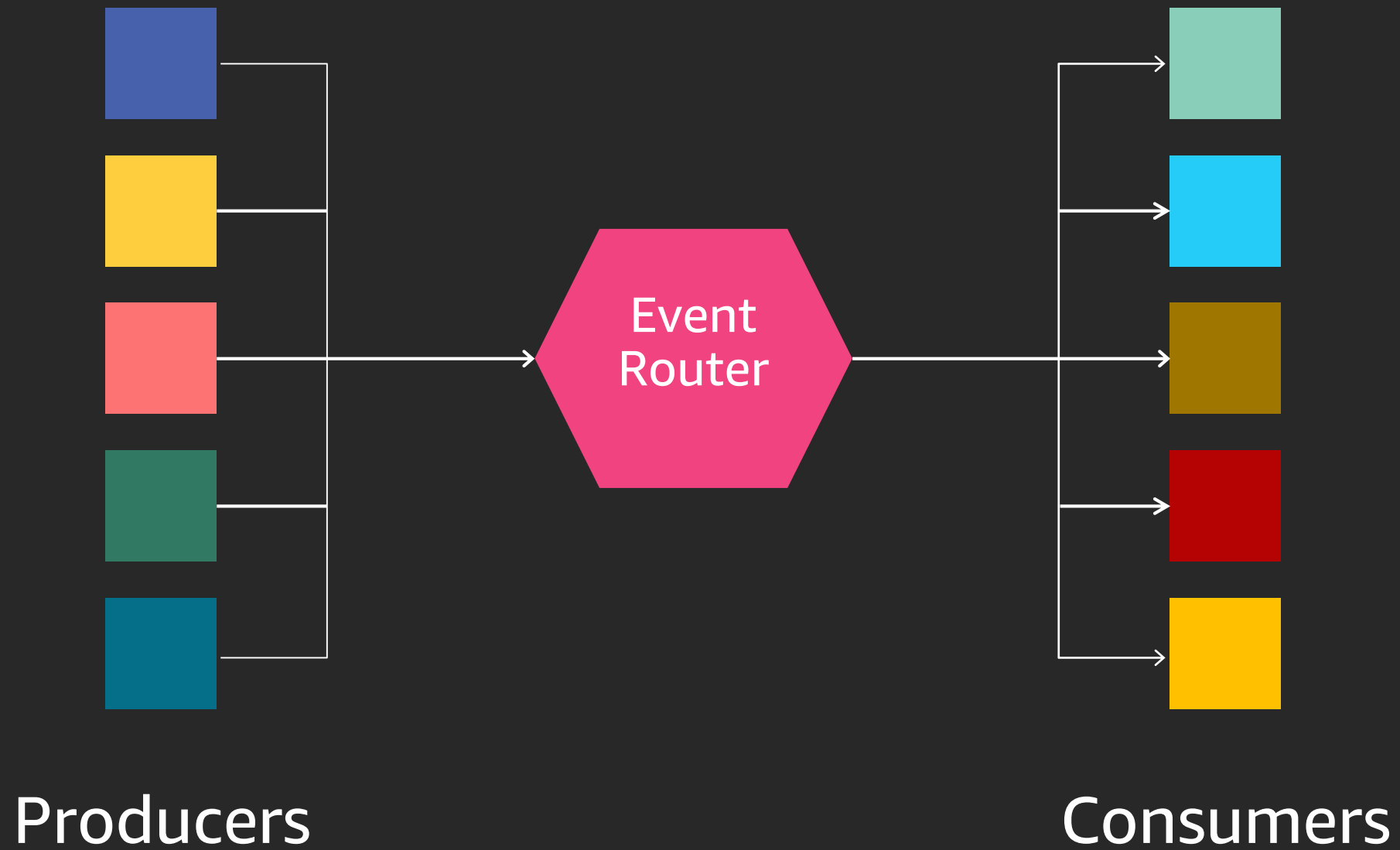re:Invent

Why do you need a router?

Producer

POST /event

Consumer

Why do you need a router?

Producers   Consumers

Why do you need a router?

Producers   Consumers

Why do you need a router?

Producers

Event Router

Consumers
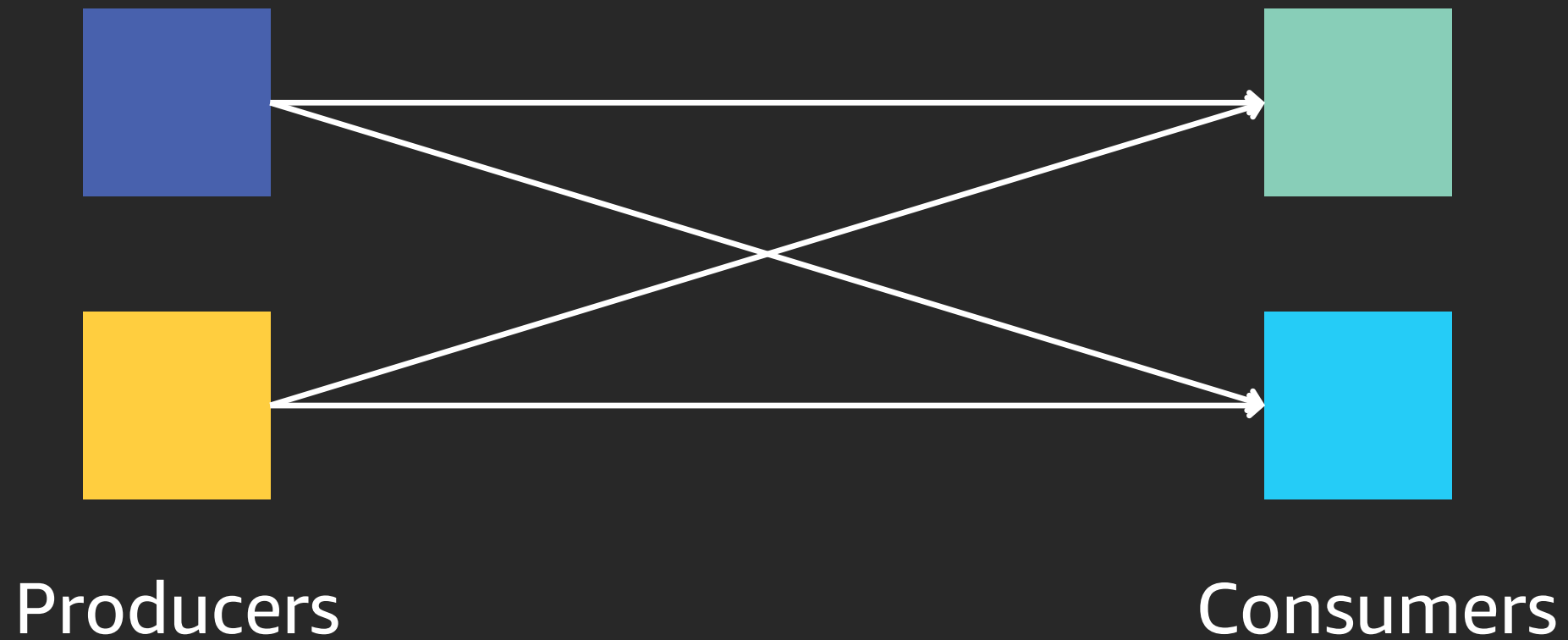
Amazon EventBridge
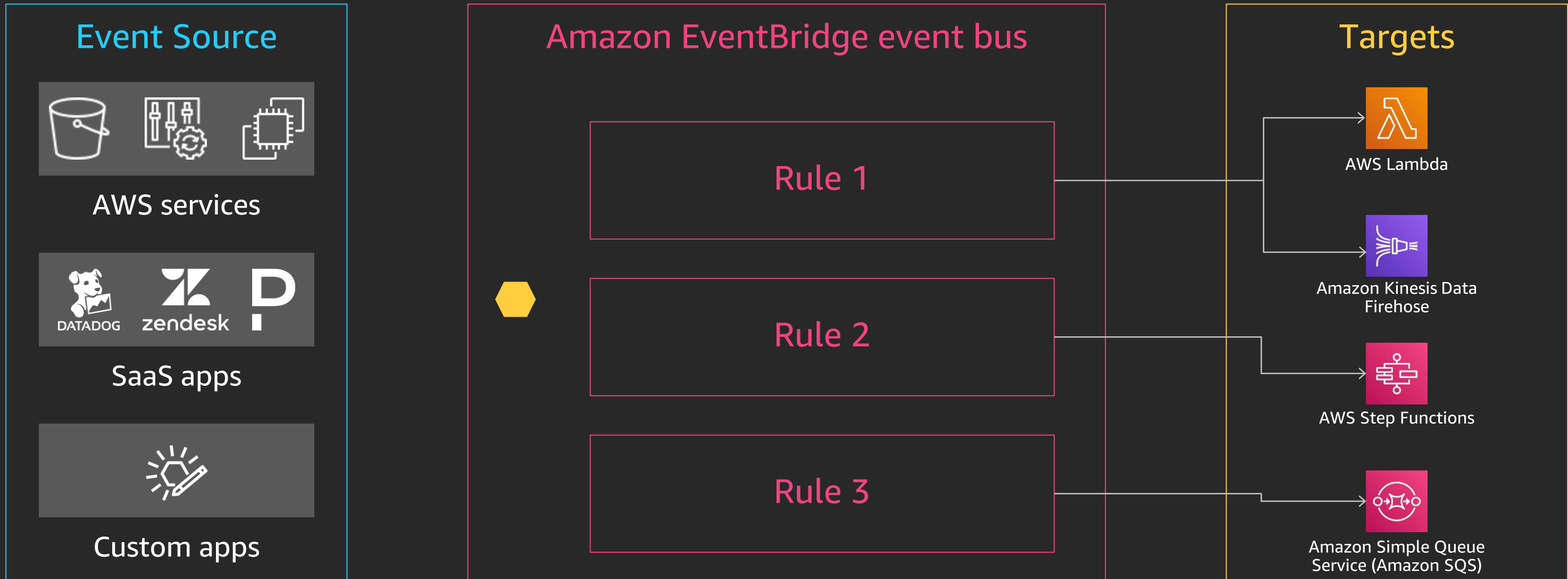
**Amazon
EventBridge**

Fully managed, pay-as-you-go

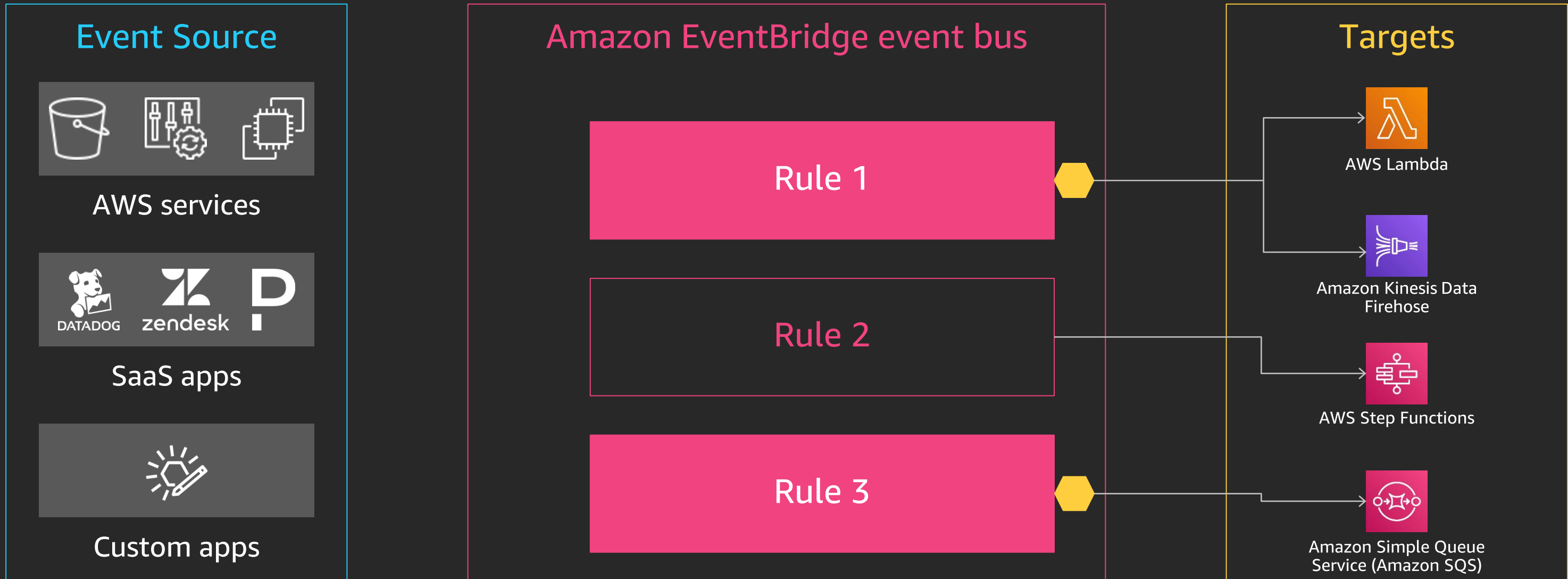**Native integrations with SaaS providers**

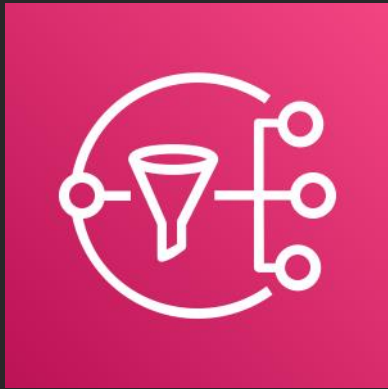**17 target services**

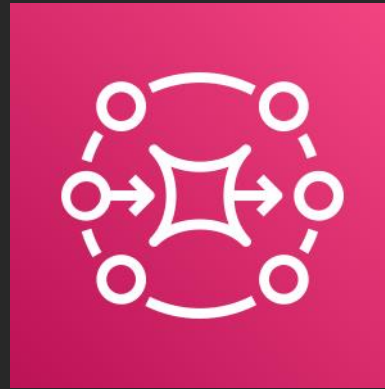**Easily build event-driven architectures**

Amazon EventBridge overview

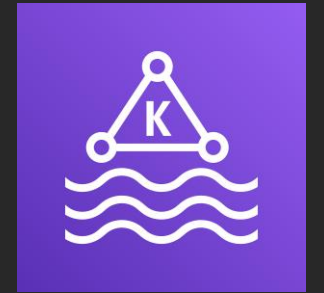# Amazon EventBridge overview

Other event routers

Amazon Simple Notification Service (Amazon SNS)

Amazon MQ

Amazon Kinesis Data Streams

Amazon Managed Streaming for Kafka

Serverless pub/sub
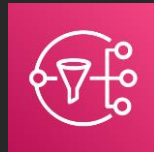
Managed message broker

Data streaming
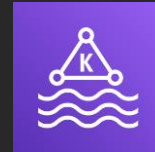
Operational responsibility

Amazon EventBridge

Amazon MQ

Amazon SNS

Kinesis
Data Streams

Amazon MSK
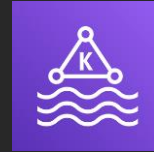
kafka

Less customer
responsibility

More customer
responsibility

Event ordering

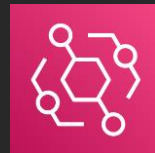**Well-ordered**

Kinesis
Data Streams

Amazon MSK

Amazon MQ

No ordering

Amazon EventBridge
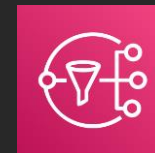
Amazon SNS

Pricing
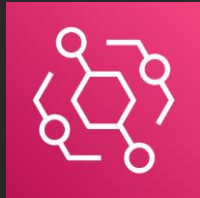
Amazon EventBridge

$1/M events

**Amazon Kinesis
Data Streams**

$0.015/shard hour

0.014/M PUT payload units

Pricing
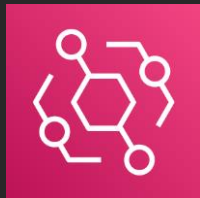
	1 TPS 100 KB payloads (cost per mo)	40 TPS 100 KB payloads (cost per mo)	1,000 TPS 5 KB payloads (cost per mo)
Amazon EventBridge	$3	$105	$2,628
Amazon Kinesis Data Streams	$11	$50	$92

Integrations
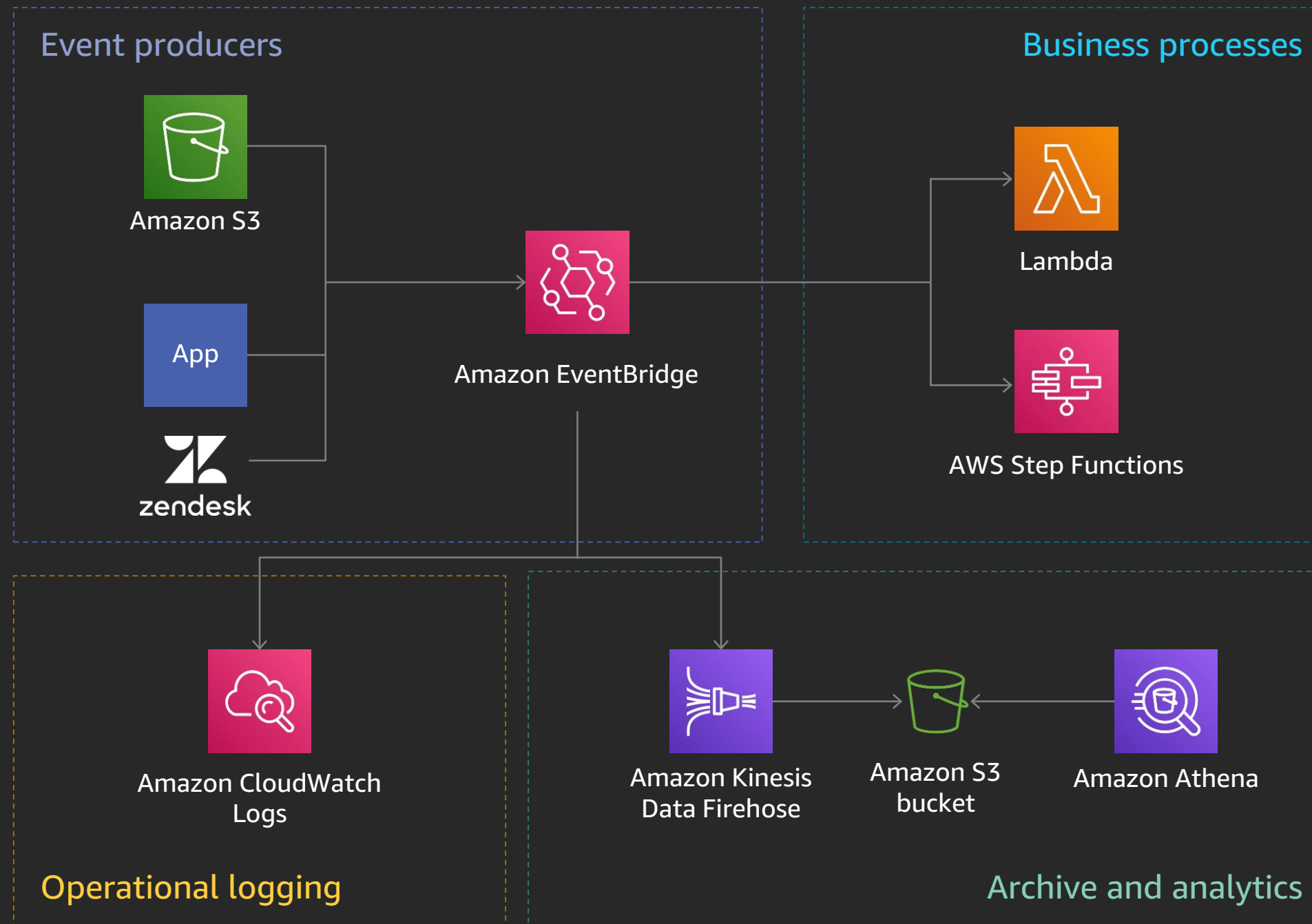
How many event buses?

Types of event buses

Default
AWS service events

Amazon S3

Amazon EC2

Amazon EventBridge
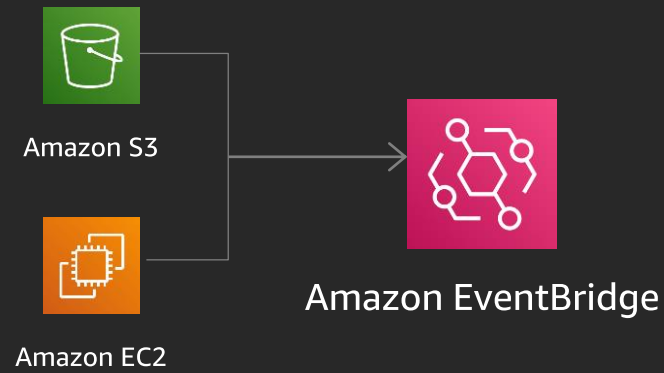
Custom
Application events

Application 1

Application 2

Amazon EventBridge

Partner
SaaS events

DATADOG

Amazon EventBridge
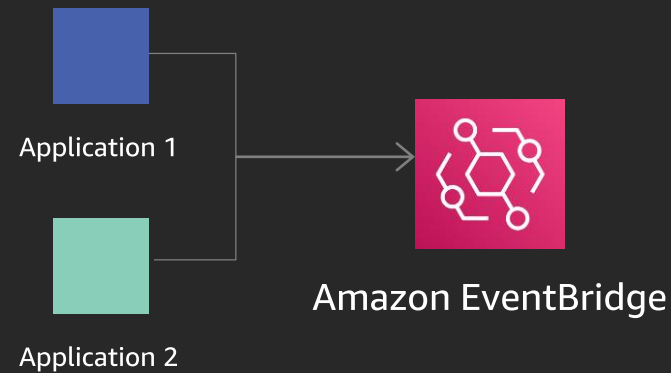
How many event buses should I have?

Avoid routing in the prod...

Order servic...
Fulfillment service

Admin event bus
Customer ev... ...bus
Shipping event b...

Ad... ... service
Custo... ...r service
Shipping service
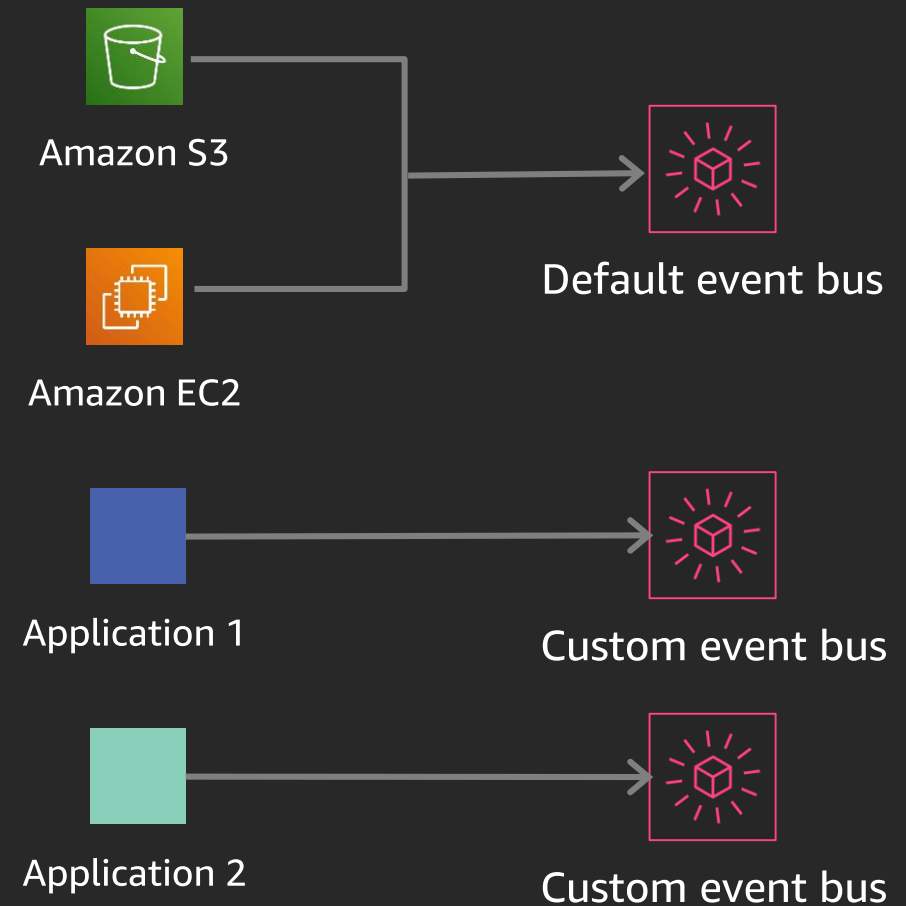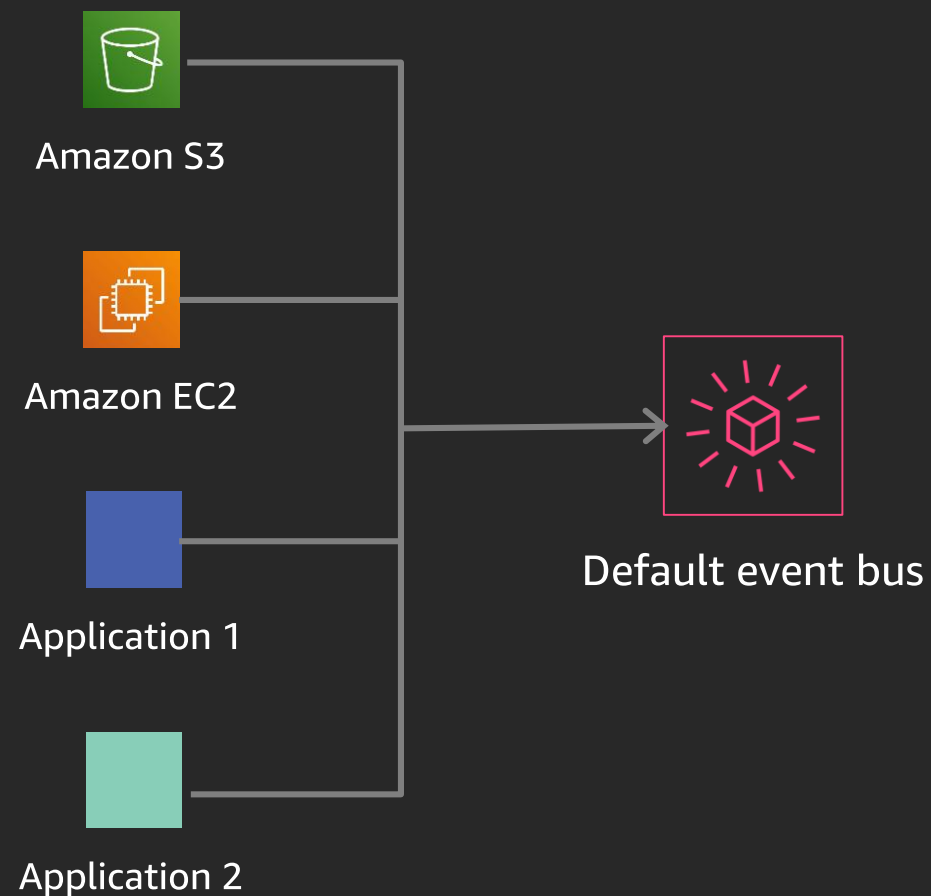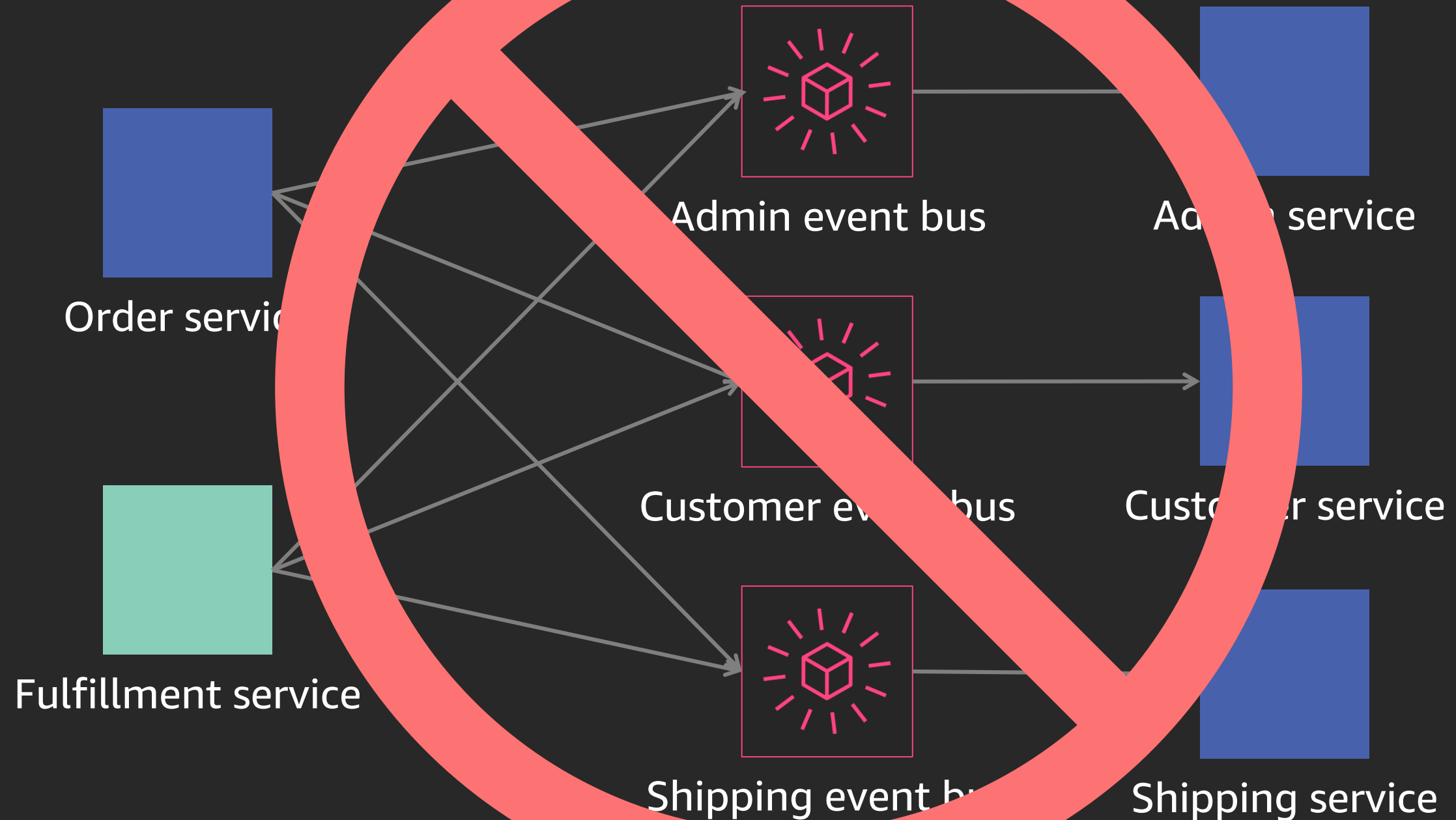
Event bus domain alignment

Order management bus

User admin bus

Event bus provisioning

shared services

Amazon CloudWatch alarms

Amazon EventBridge shared event bus

Amazon Kinesis Data Firehose

Amazon CloudWatch Logs

consumer a

rule

AWS Step Functions workflow

Amazon DynamoDB

Amazon Simple Email Service

consumer b

rule

Amazon SQS queue

AWS Lambda function

Cross-account events

Account 222222222222

Consumer

Account 111111111111

Producer

Account 333333333333

Consumer

Cross-account events

Account 222222222222

Consumer

Local
event bus

Account 111111111111

Producer

Requires routing in
the producer

Account 333333333333

Local
event bus

Consumer

Cross-account events

Account 111111111111

Producer

Local
event bus

Account 222222222222

Consumer

Local
event bus

Account 333333333333

Consumer

Local
event bus

Migrating legacy systems

aws

Strangling legacy applications with events

Structuring events

Events vs. full state descriptions

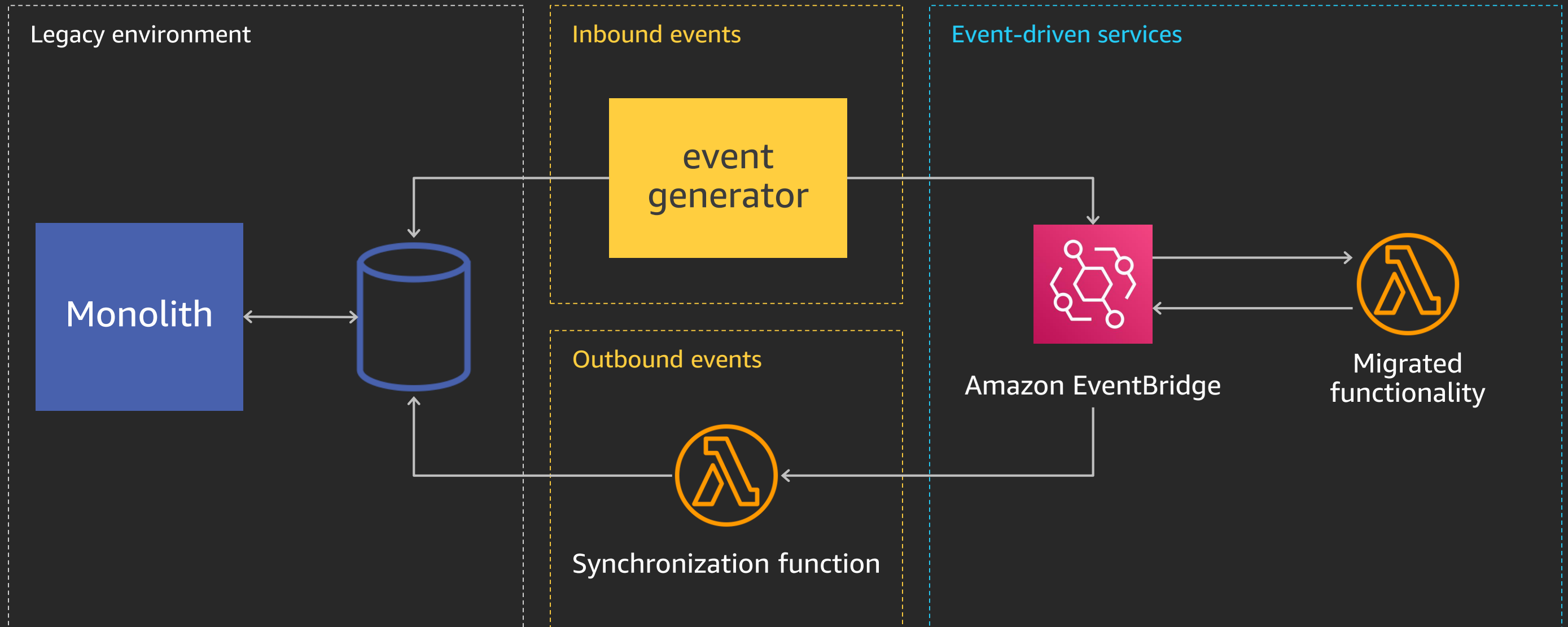Order 123 was created at 10:47 a.m. by customer 456

Events

Order 123 was created at 10:47 a.m. by customer 456. The current status is Open, the total was $237.51, the items were …

Full state description
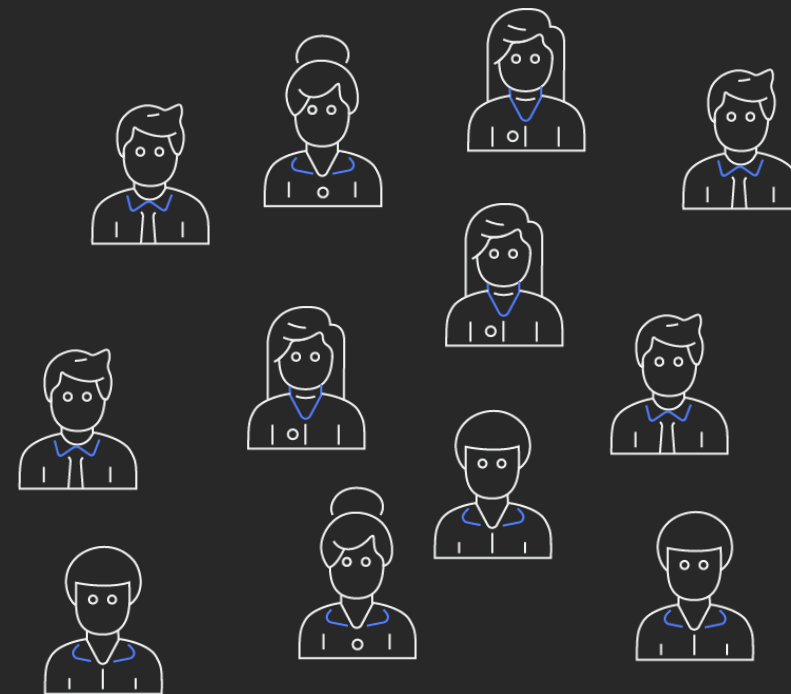
Considerations with sparse events

How do you manage event types?

Loyalty registration

Order created

Order cancelled

Loyalty registration

User registered Invoice sent

Item shipped

Review submitted Payment received

Payment received

Schema Registry and Discovery

Amazon EventBridge

Source of truth for sharing schema

Explicitly published and auto-discovered

Integrations for VS Code and JetBrains

Language bindings for Java, Python, or TypeScript

Schema Registry and Discovery pricing

Schema Registries

Free!

Schema Discovery

Free tier	Additional usage
5M ingested events per month	**$0.10** per million ingested events

Available now

Schema Registry and Discovery is in public preview in the following regions
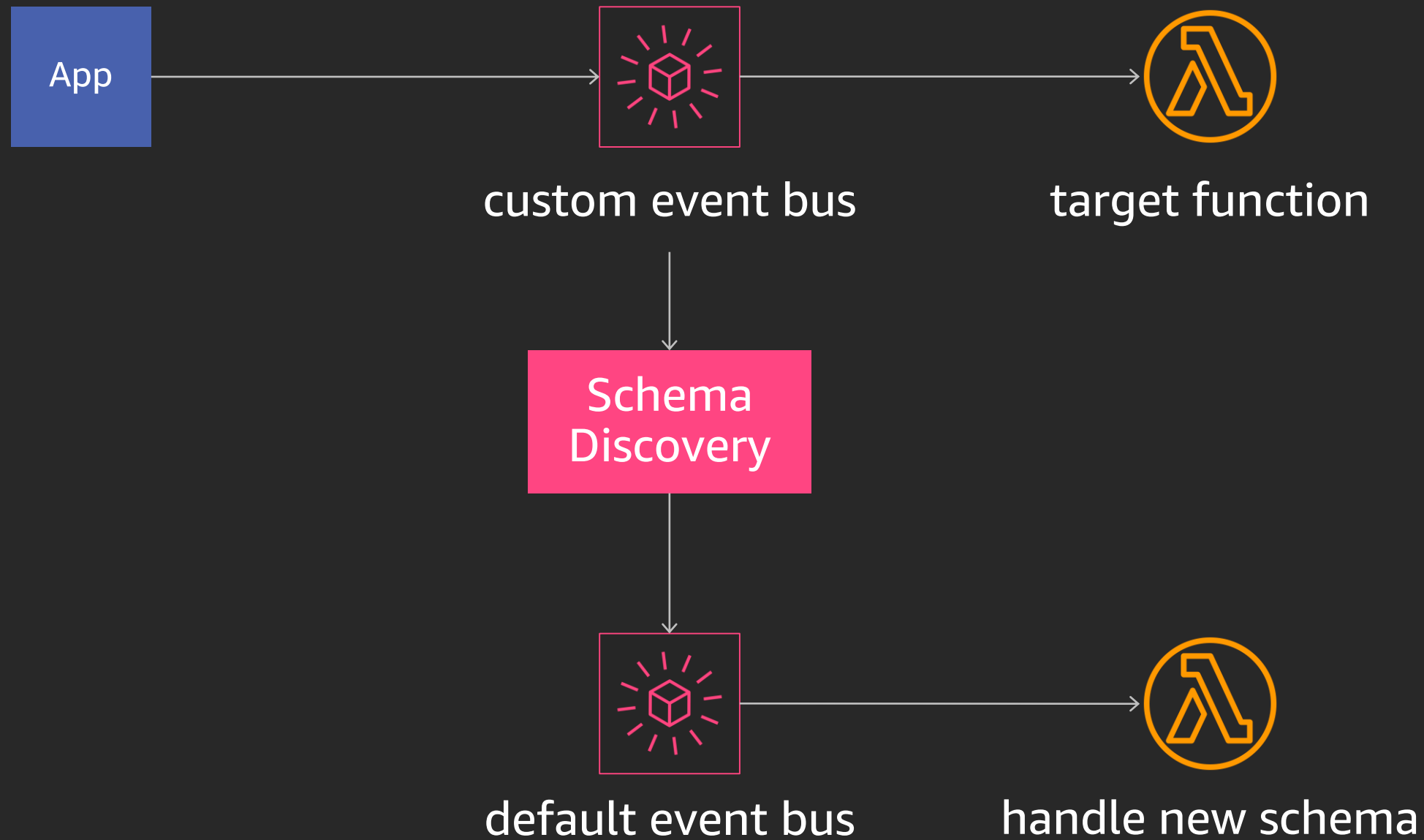
US East (Ohio)

US West (Oregon)

US East (Northern Virginia)

Asia Pacific (Tokyo) Region

Europe (Ireland)

Demo

aws

Detecting new schemas

App → custom event bus → target function

custom event bus → Schema Discovery → default event bus → handle new schema

Thank you!

Please complete the session survey in the mobile app.