
AWS
re:Invent
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API310-R

# Domain-driven design and event storming

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# What we are going to learn today

- Why distributed systems?
- The power of collaboration
- Discovery techniques
- Let’s model together
- Time for implementing our solution
- Summary

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# Why do we need distributed systems?

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# Distributed systems goals



Organization scalability



Agility



Faster feedback loop



Reduce external dependencies



Reducing blast radius

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# Which architecture characteristic can help us achieve these goals?

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"Modularity: the quality of consisting of separate parts that, when combined, form a complete whole."

Cambridge Dictionary

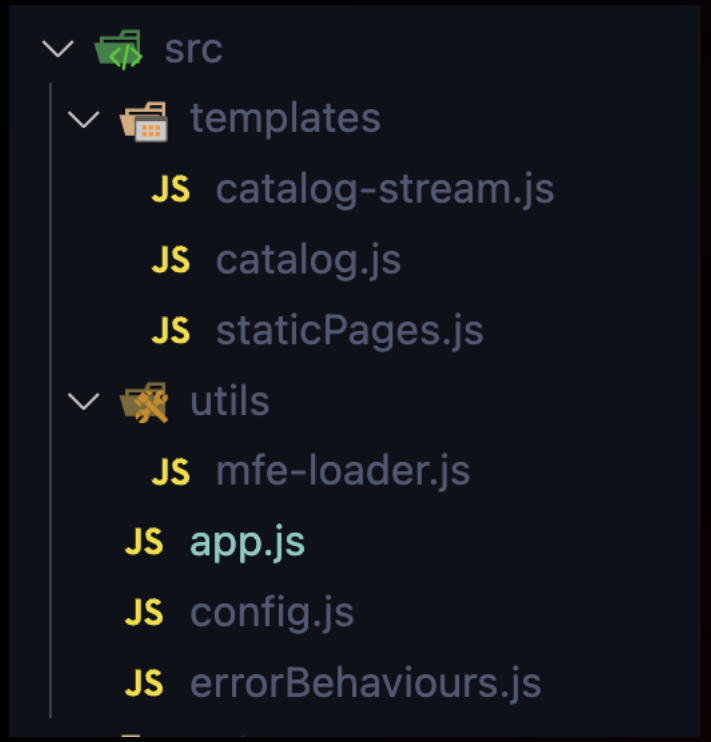
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"A system lacks modularity when a tweak to one of its components affects the functioning of others."

Cambridge Dictionary

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# Modularity




Code



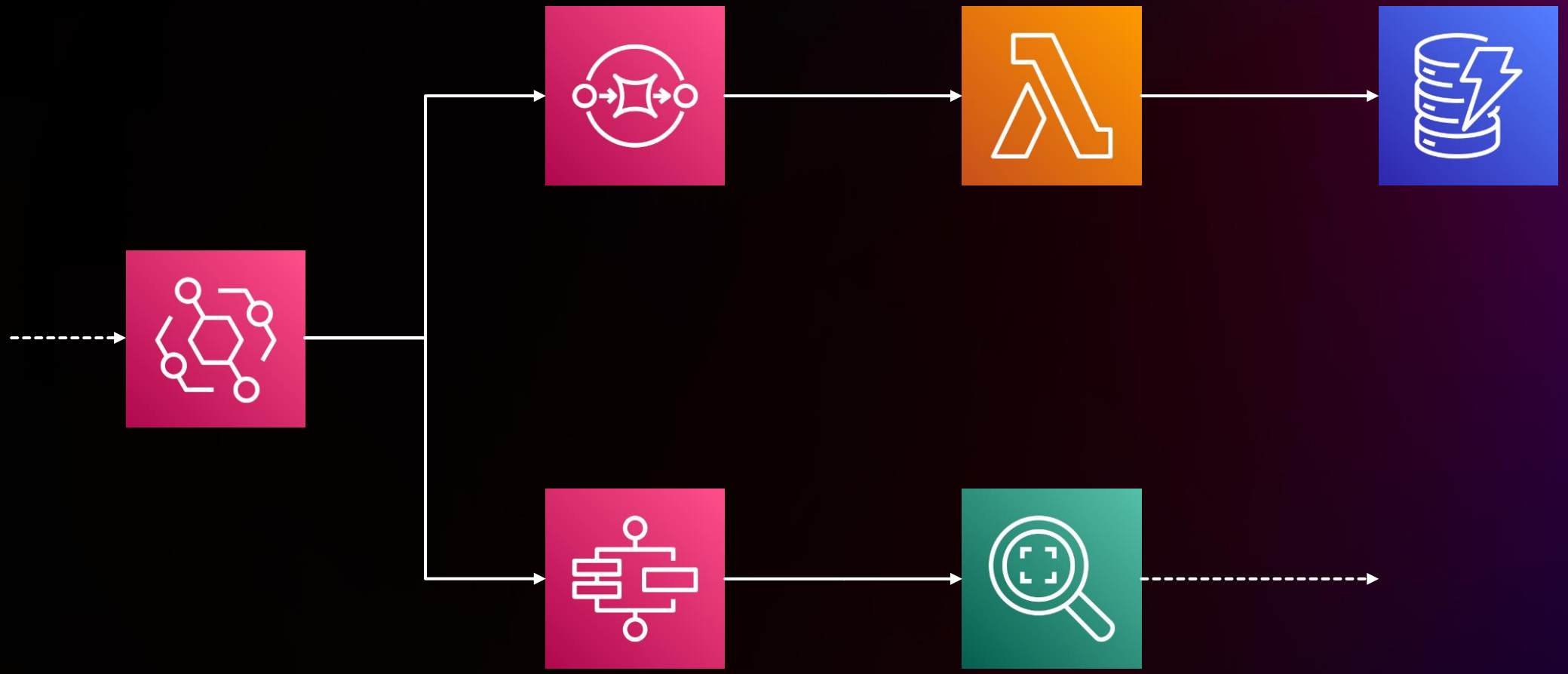
Infrastructure

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# SMALLER doesn't mean SIMPLER

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# Serverless and event-driven architectures



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# Accidental event-driven architectures

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# What can we do to avoid accidental complexity?

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# Domain-driven design to the rescue

Domain-driven design (DDD) proposes to target the root cause for failed software projects from a different angle

Effective communication is the central theme of the DDD tools and practices



Photo by Jason Goodman on Unsplash

**Vlad Khononov**

Author of *Learning Domain-Driven Design*

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# Benefits of domain-driven design

- Increase business understanding across the organization
- Enhance collaboration between teams
- Identify and categorize business domains inside a system
- Helps revisiting the organization structure and business decisions



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"It's developers' (mis)understanding, not domain experts' knowledge, that gets released in production."

**Alberto Brandolini**

Author of *EventStorming*

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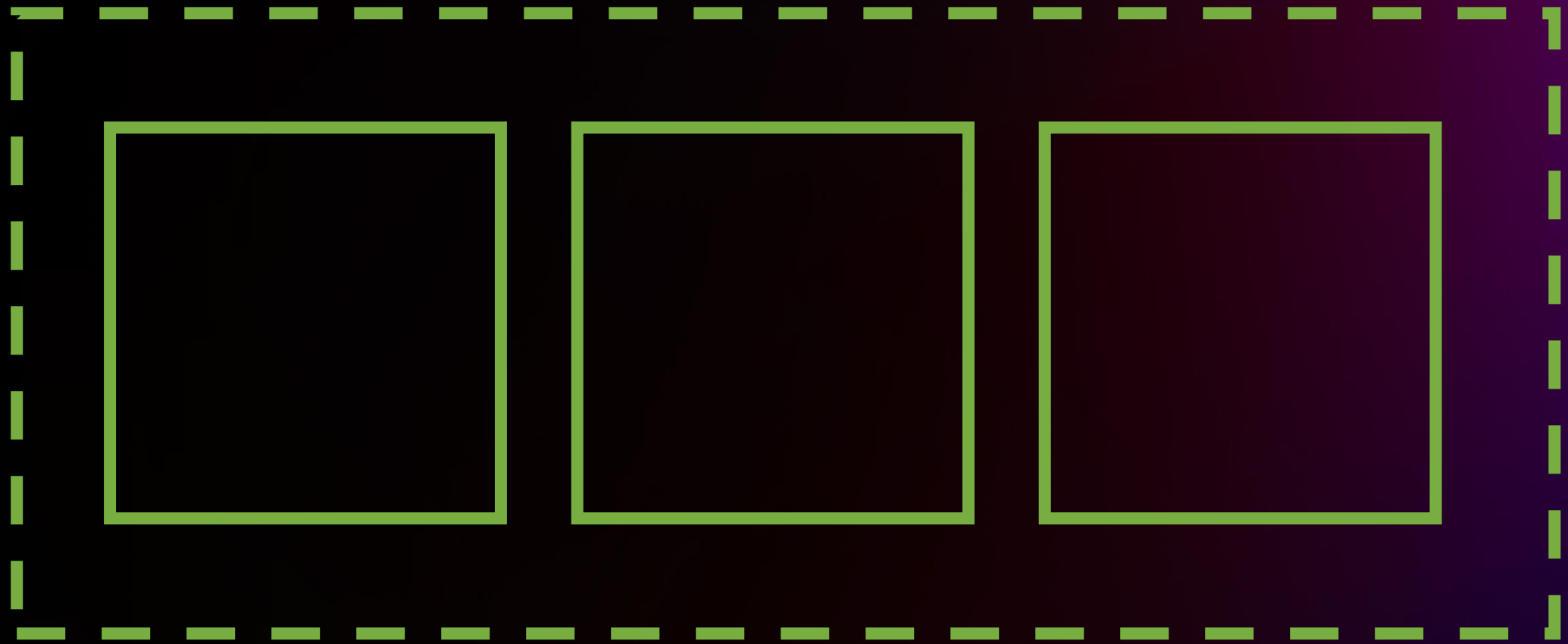
"Ubiquitous Language is modeled within a limited context, where the terms and concepts of the business domain are identified, and there should be no ambiguity."

**Felipe de Freitas Batista**

*The Domain Driven Design*

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# Break down a system



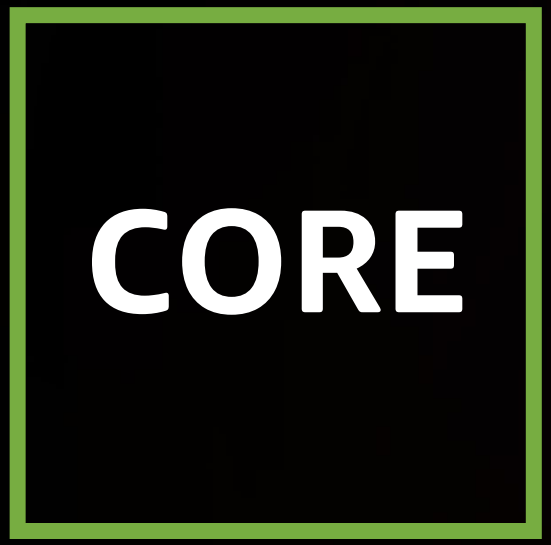
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# Business domains




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# Business domains




- Key business differentiator
- Build over buying
- Fast feedback loop
- Investment on organization structure

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# Business domains

**SUPPORTING**

- No competitive advantage
- Often build, sometimes buy
- Changes are less frequent
- Less organization investment

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# Business domains

**GENERIC**

- Needed but not core to the business
- Buy over build
- Ready-made solutions
- Outsourcing

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# Bounded context:

> "An internally consistent system with carefully designed boundaries that mediate what can enter and exit the system."

**Dave Taubler**

Staff Software Engineer - Credit Karma

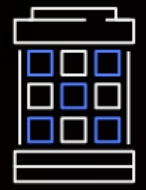
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# Domain-driven design is just PART of the solution

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# What else do we need?



Decentralization



Automation



Governance

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# Where do we start?

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# What is event storming?

"An odd-looking workshop with a massive consumption of orange sticky notes."

**Alberto Brandolini**

Creator of event storming

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# When to use event storming

- Discovering domains
- Identifying boundaries in a system
- Sharing knowledge within teams
- Green and brown field projects

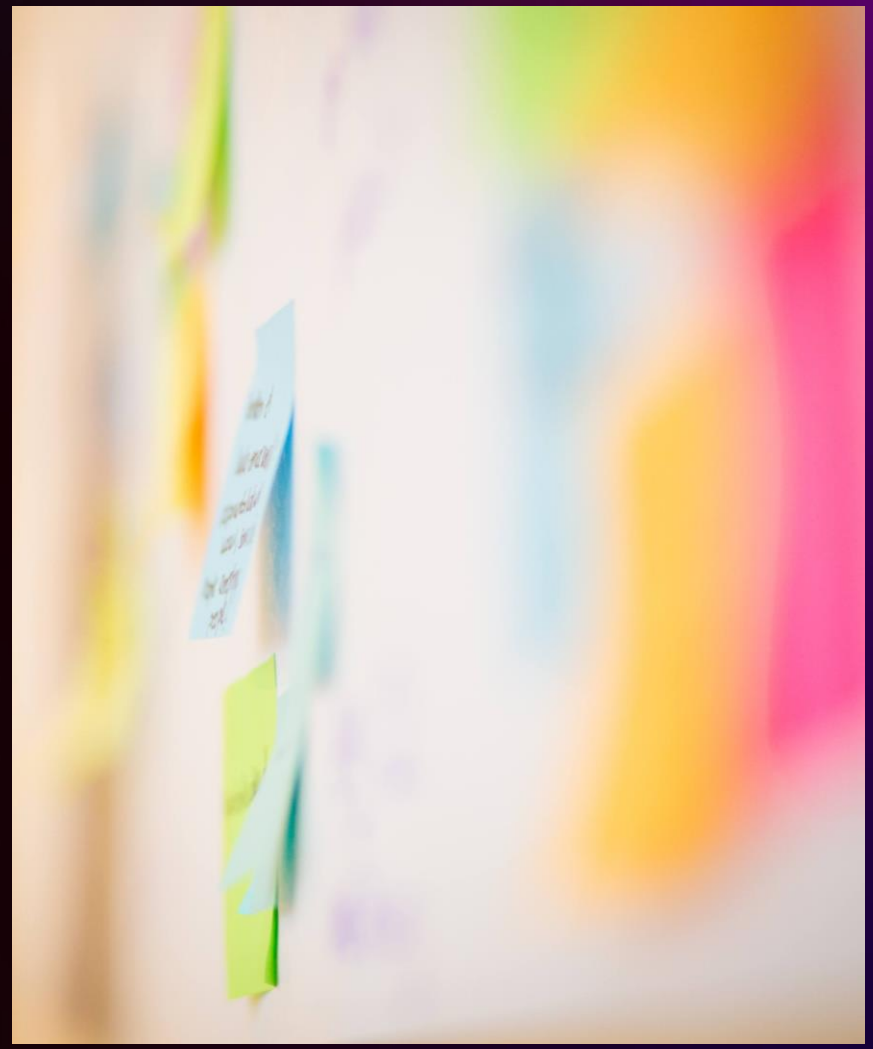
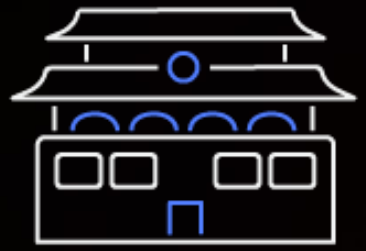


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# Event storming sessions



Big-picture
event storming



Design-level
event storming

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# Event storming room layout





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# Event storming session characteristics



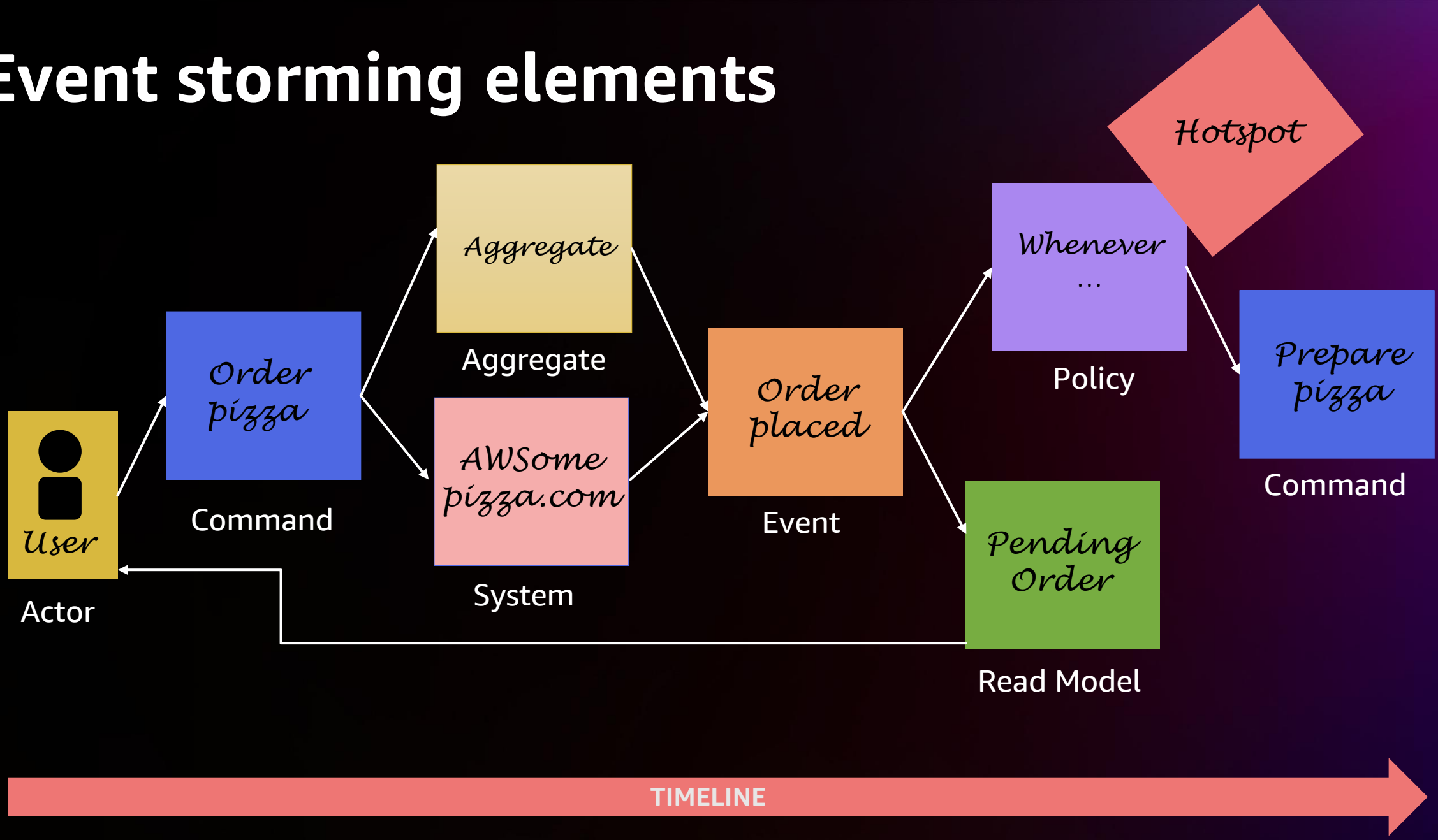

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- Chaotic
- Intense
- Controversial
- Emotional

**FOCUS ON THE BUSINESS SIDE**

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# Event storming elements

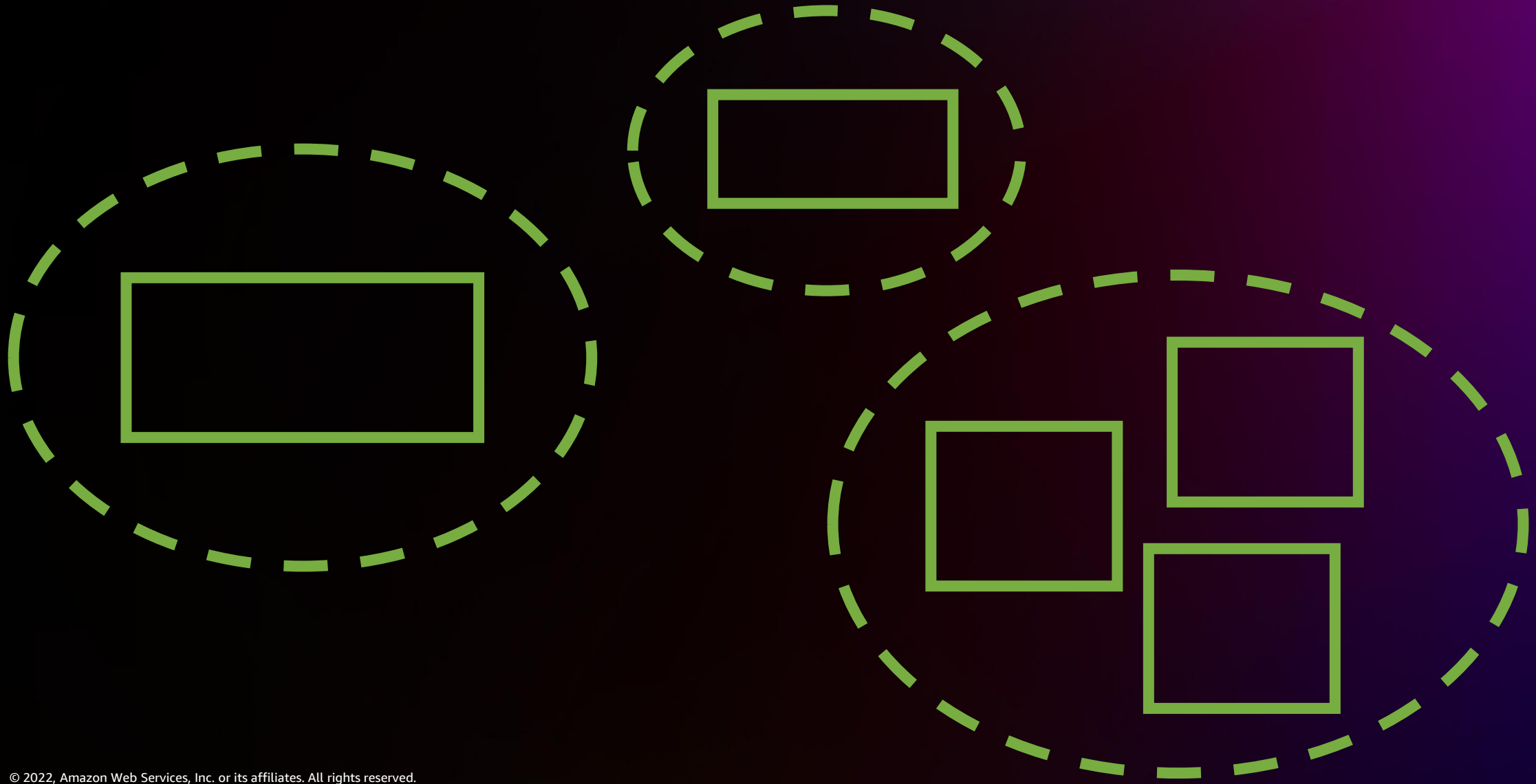



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# Let’s try it out!

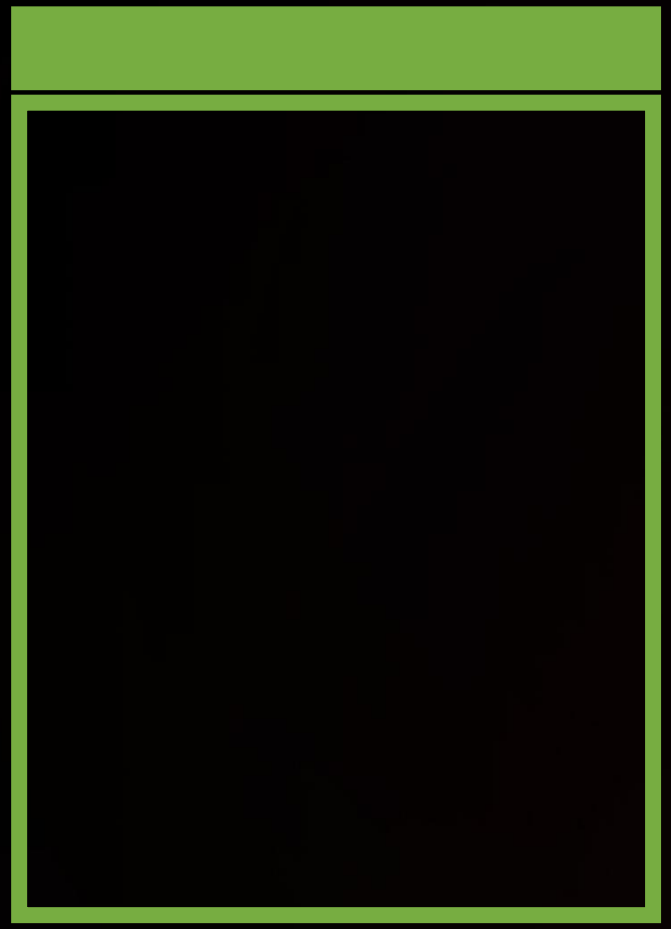
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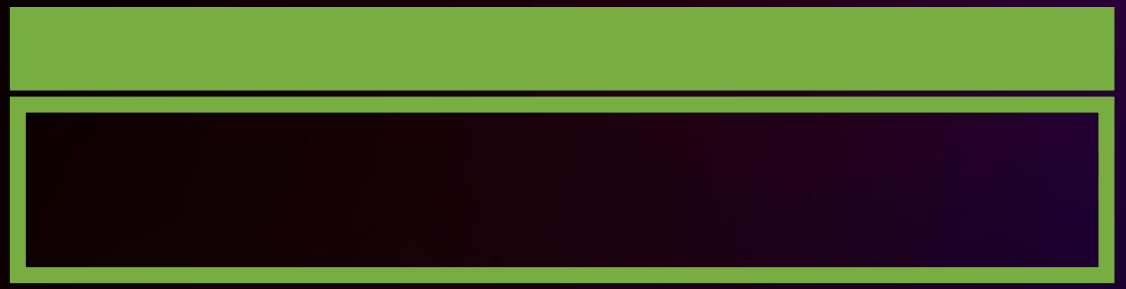
# How to map into serverless



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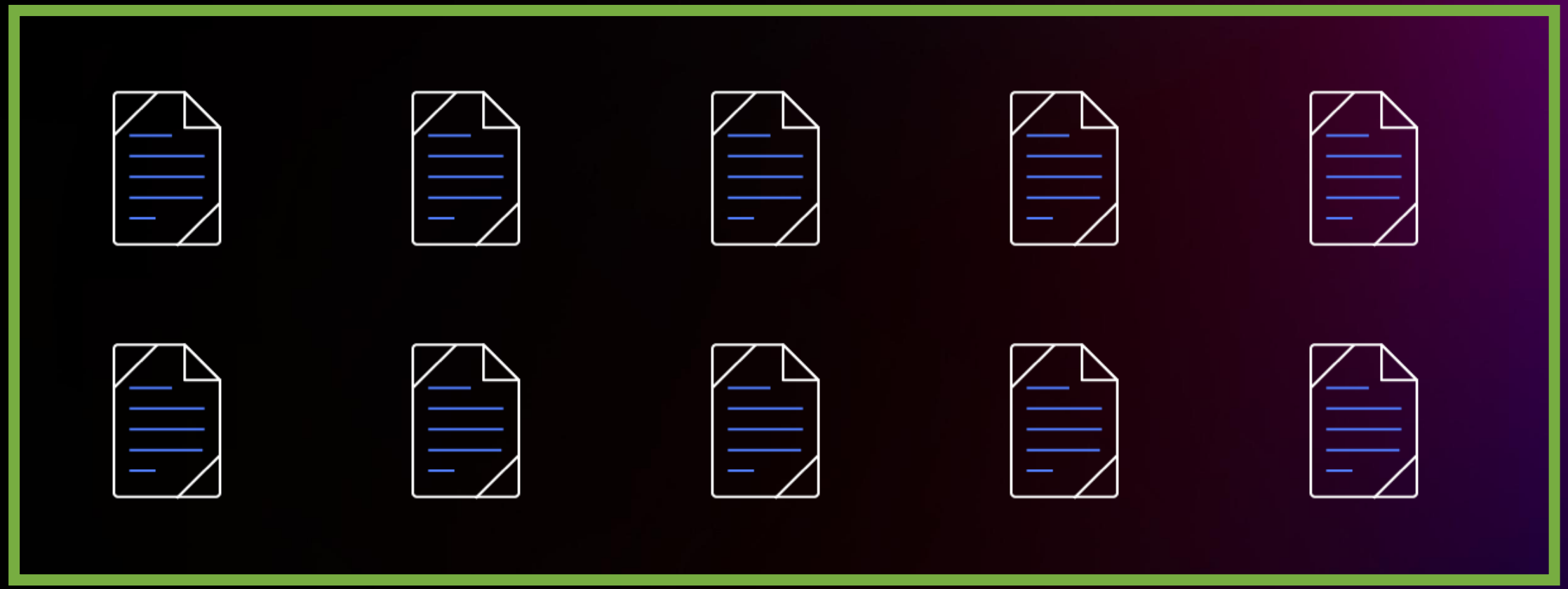
# Microservices heuristic





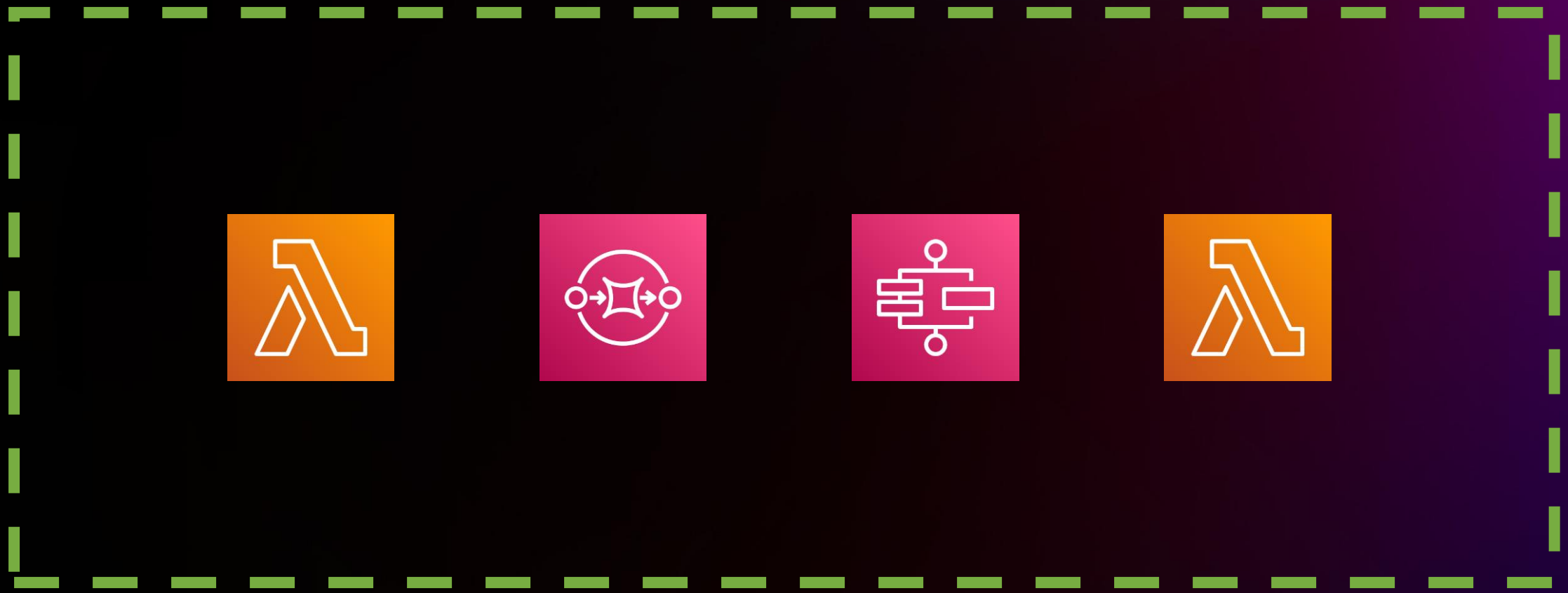
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# Microservice



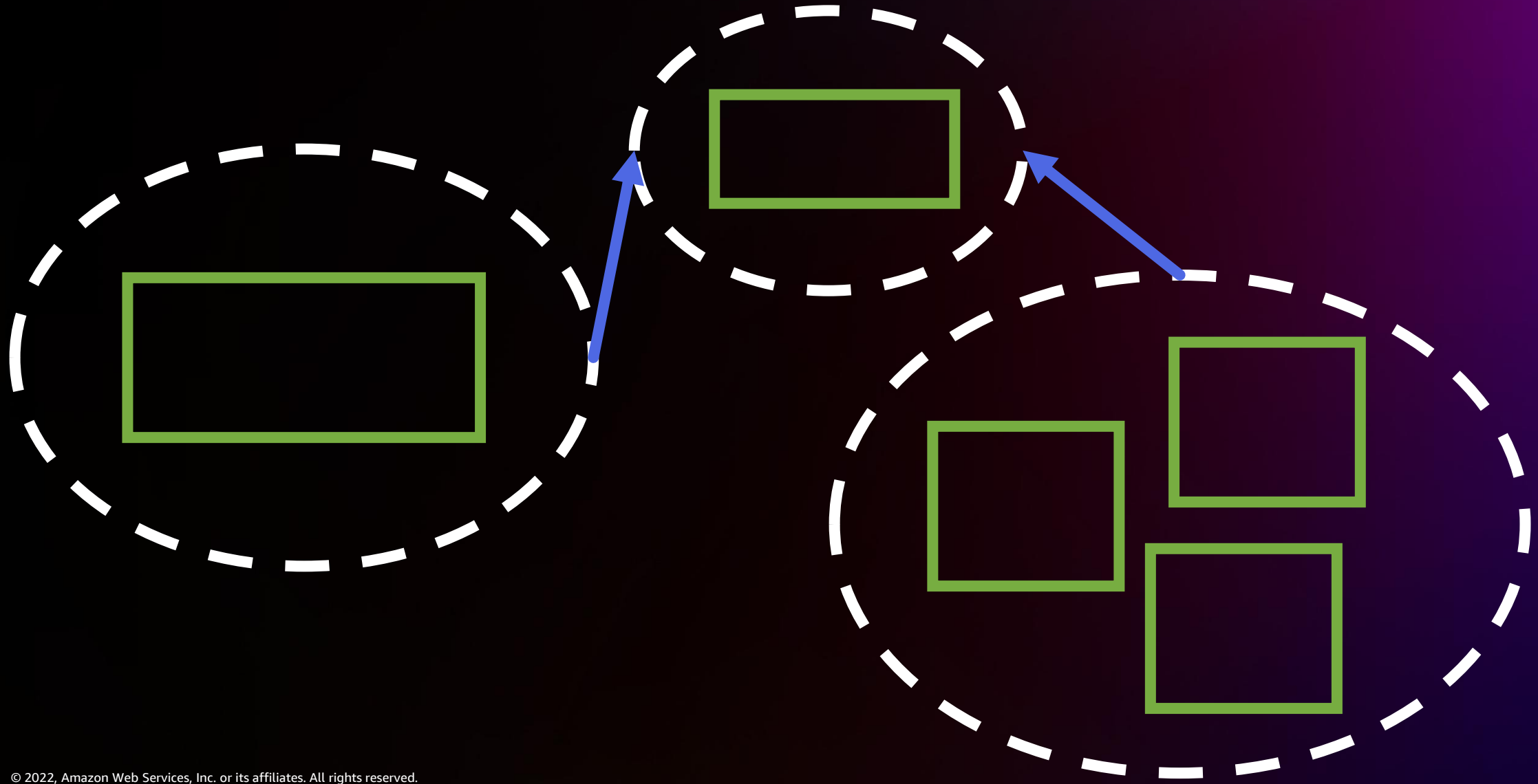
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# Serverless microservice



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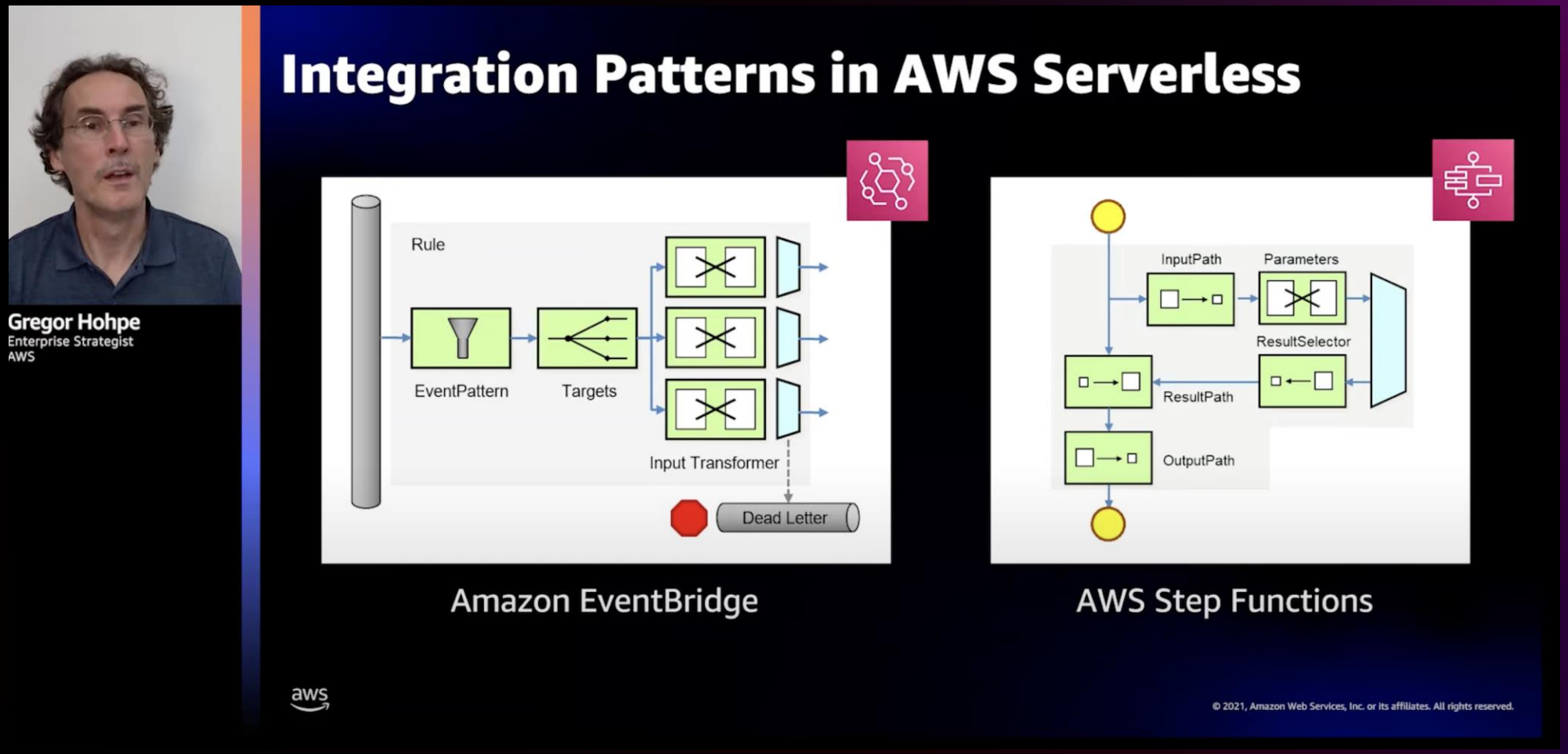
# Communication across bounded contexts



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# THINK in design PATTERNS

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https://bit.ly/3rgCfXz

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# GROW not build SOFTWARE

**Frederick Brooks** (Computer Architect)

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# Summary

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# Takeaways

- Communication is pivotal in successful software projects
- Event storming is a great mechanism for business domain discovery
- We can derive our technical and organizational implementations from event storming




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# Resources

- *Learning Domain-Driven Design: Aligning Software Architecture and Business Strategy* by Vlad Khononov
- *EventStorming* by Alberto Brandolini
- *Team Topologies: Organizing Business and Technology Teams for Fast Flow* by Matthew Skelton and Manuel Pais
- *No Silver Bullet – Essence and Accident in Software Engineering* by Frederick P. Brooks Jr. (whitepaper: https://bit.ly/3dIrOJm)

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# Check out these other sessions

**API307: Designing event-driven integrations using Amazon EventBridge**

Thursday, Dec. 1, at 4:15 PM – Mandalay Bay Lagoon I

SVS404: A closer look at AWS Lambda

Wednesday, Nov. 30, at 10:00 AM – Mandalay Bay South Pacific F

API302: Building global event-driven applications

Wednesday, Nov 30, at 5:45 PM – MGM Chairman's Ballroom 368

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# Thank you!

Luca Mezzalira
@lucamezzalira



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