Cruise to Cloud Native: Chapter 2

Improving your toolset. Profiting from containers and serverless functions

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Cruise to Cloud Native in 3 episodes

Episode 1: From bare-metal to AWS
(*7 May*)

Episode 2: Getting more from advanced services
(*Today!*)

Episode 3: Bringing your company onboard!
(*8 June*)

Traditional three-tier application architecture

Web servers

Presentation layers

Application servers

Business logic

Database servers

Data layer

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How can we innovate faster?

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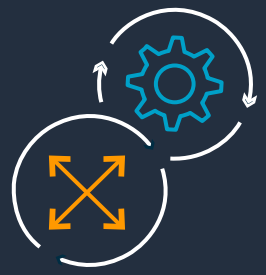
What do our customers want in a modern application?

Reliability



Flexibility

Security and isolation by design

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Traditional three-tier application architecture

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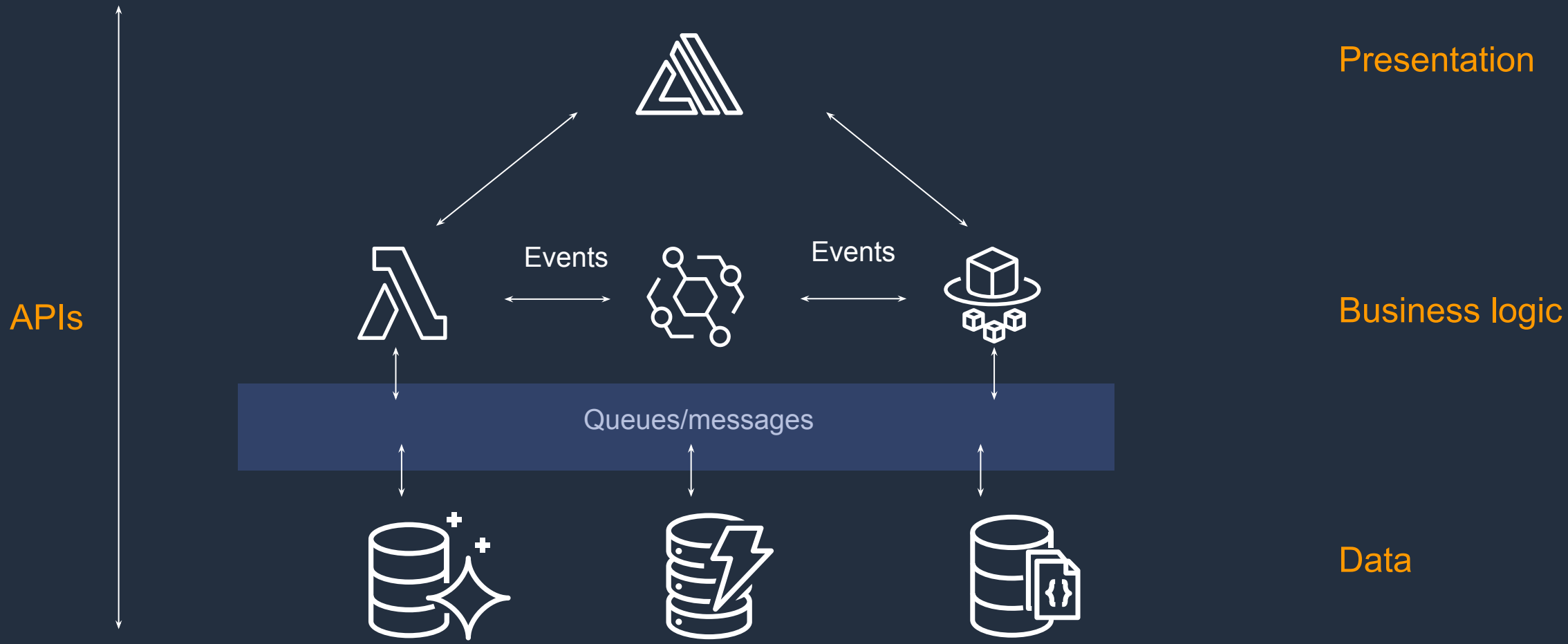
Modern application architecture



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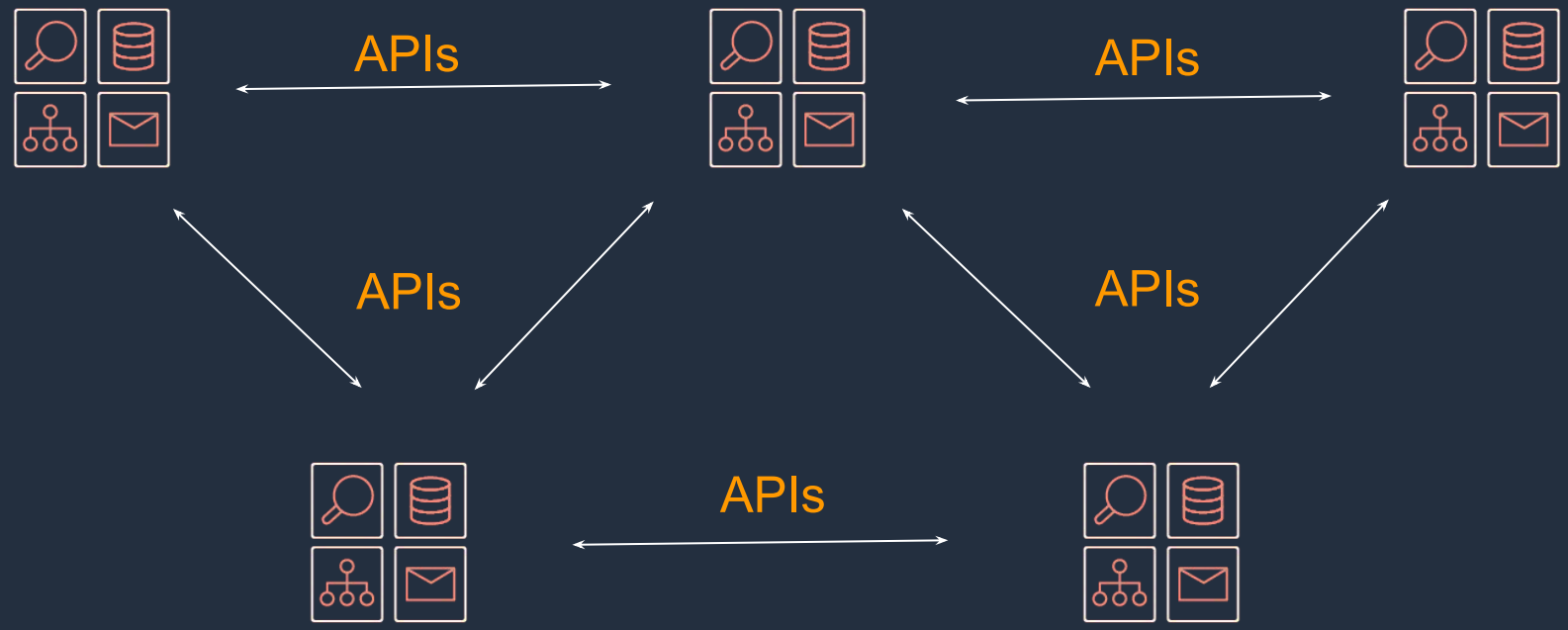
Let’s zoom out



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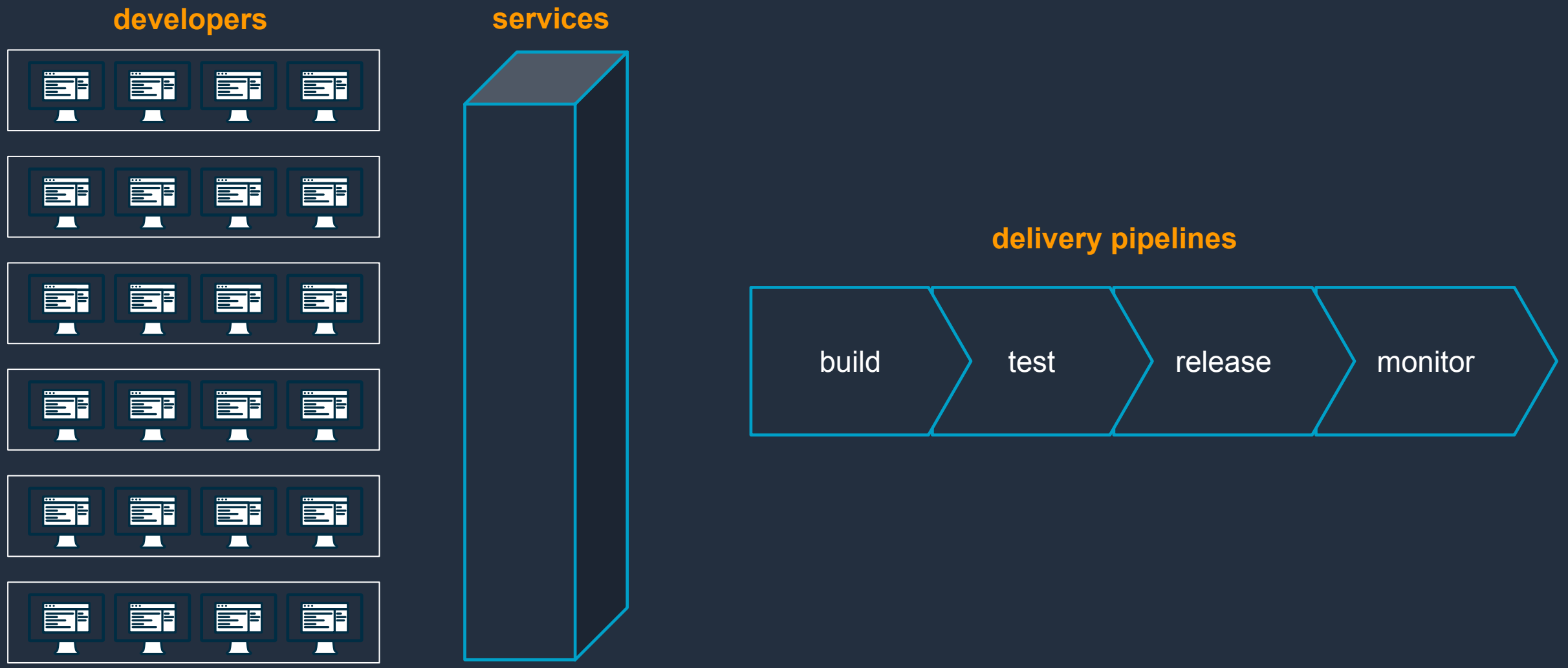
Deployment: Monolith development lifecycle



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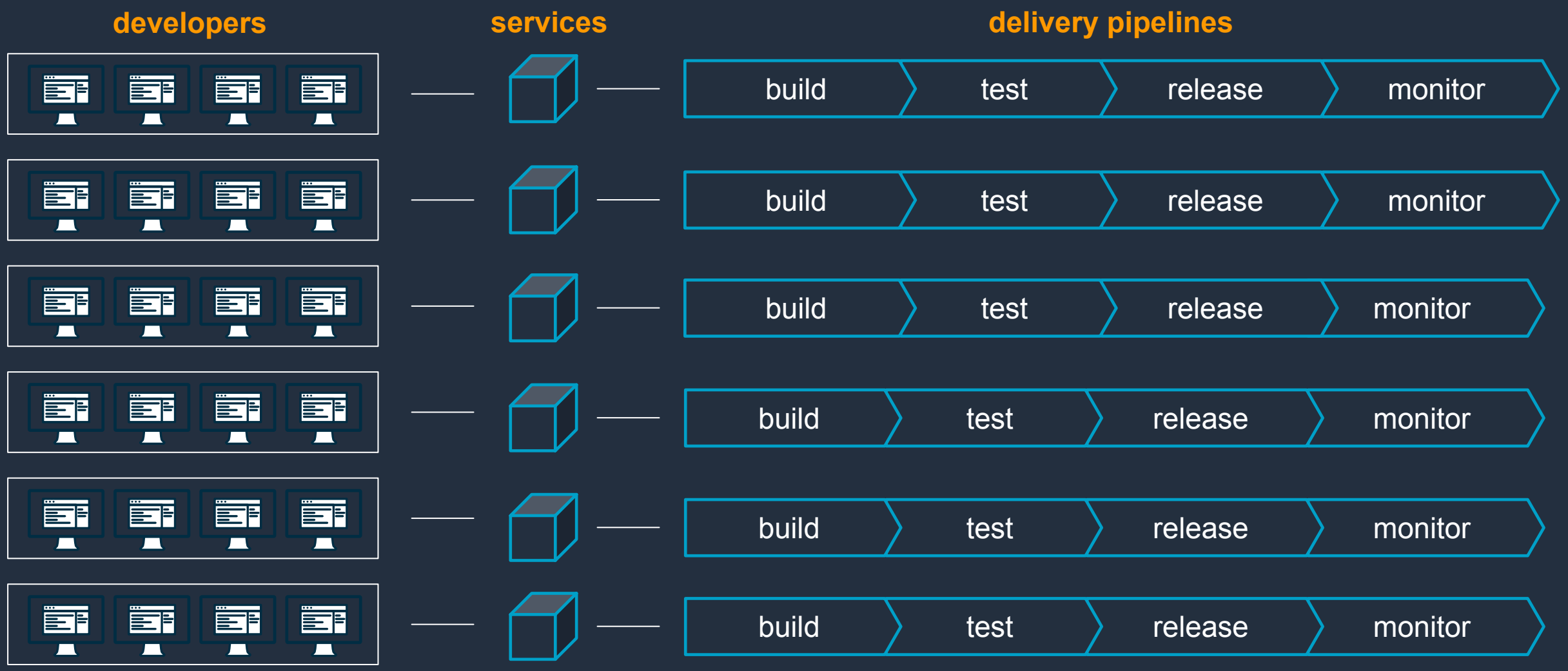
Deployment: Microservice development lifecycle



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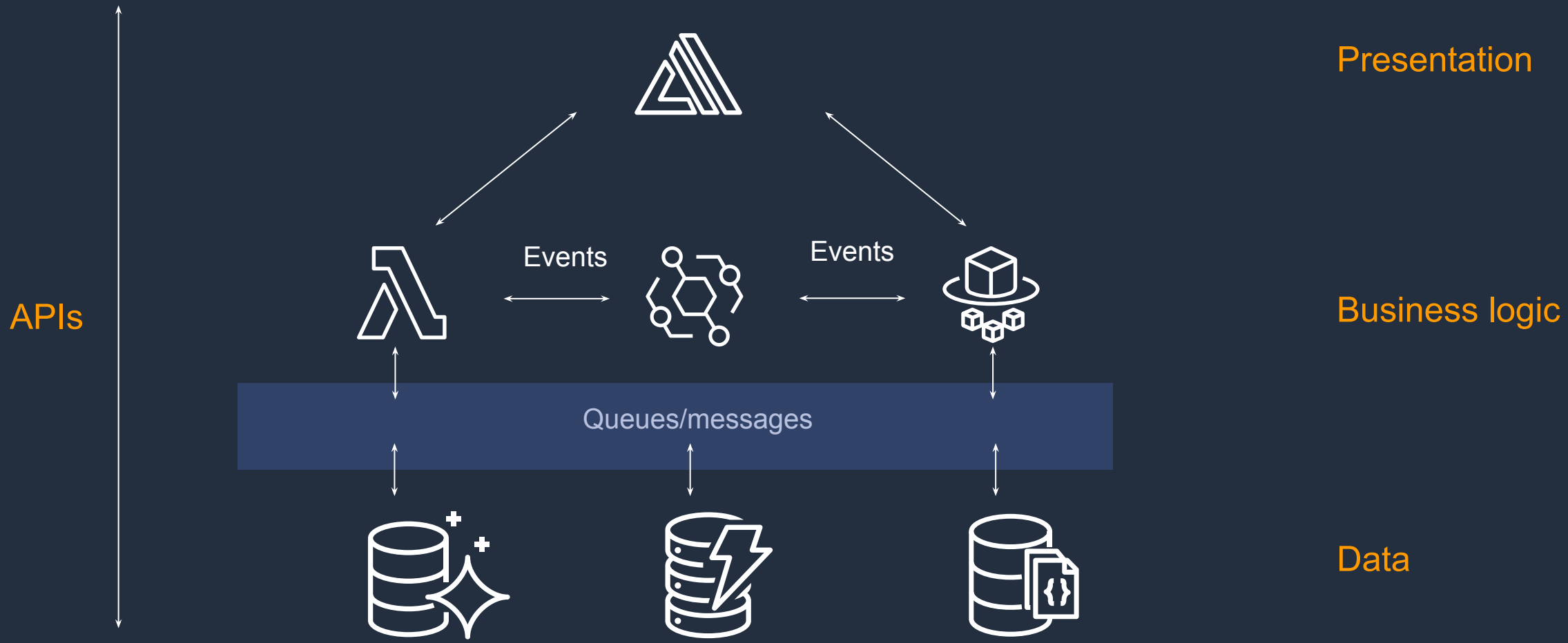
Modern application architecture



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Compute and Operations

More

Opinionated

Less

	AWS manages	Customer manages
AWS Lambda Serverless functions	Data source integrations Physical hardware, software, networking, and facilities Provisioning	Application code
AWS Fargate Serverless containers	Container orchestration, provisioning Cluster scaling Physical hardware, host OS/kernel, networking, and facilities	Application code Data source integrations Security config and updates Network config Management tasks
Amazon ECS/EKS Container-management -as-a-service	Container orchestration control plane Physical hardware software, networking, and facilities	Application code Data source integrations Work clusters Security config and updates, network config, firewall, management tasks
Amazon EC2 Infrastructure-as-a-Service	Physical hardware software, networking, and facilities	Application code Data source integrations Scaling Security config and updates Network config Management tasks Provisioning, managing scaling and patching of servers

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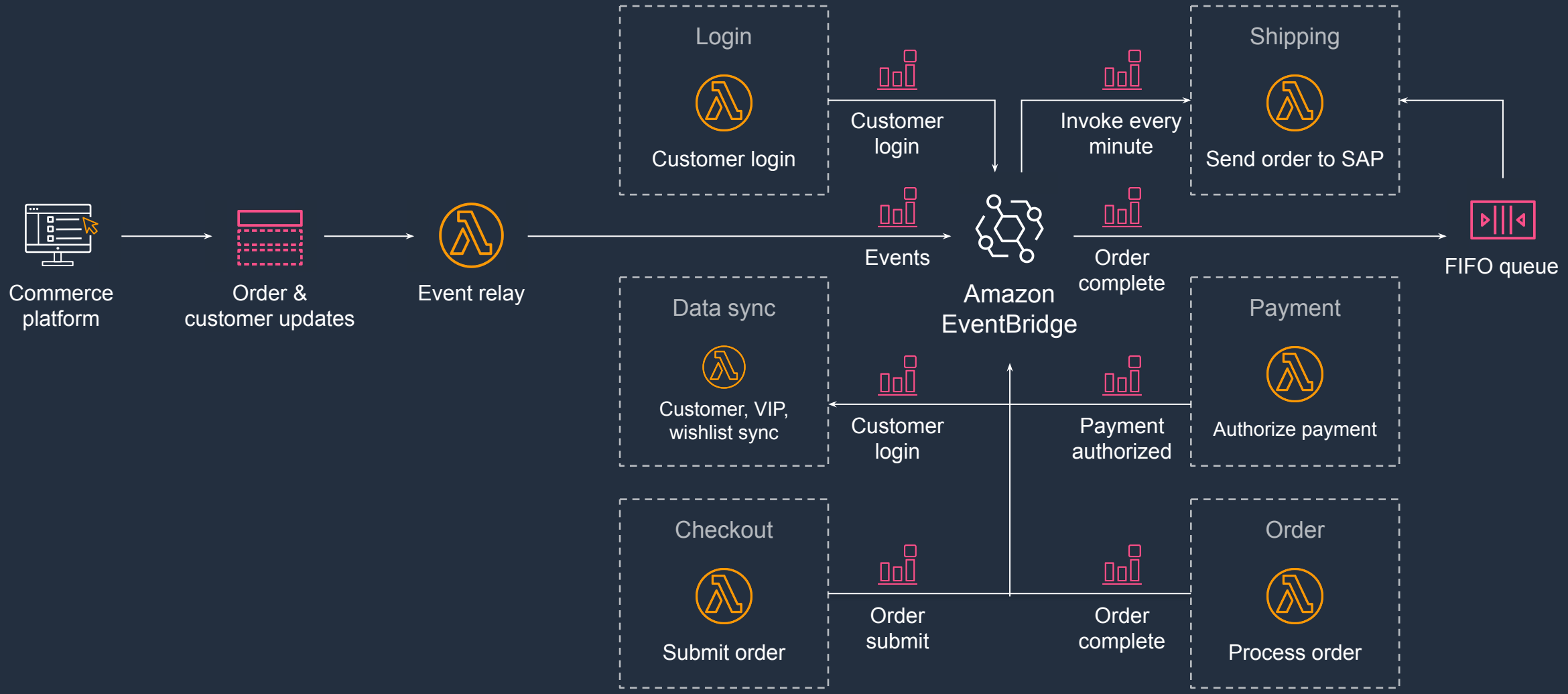
Lego uses an event-driven design



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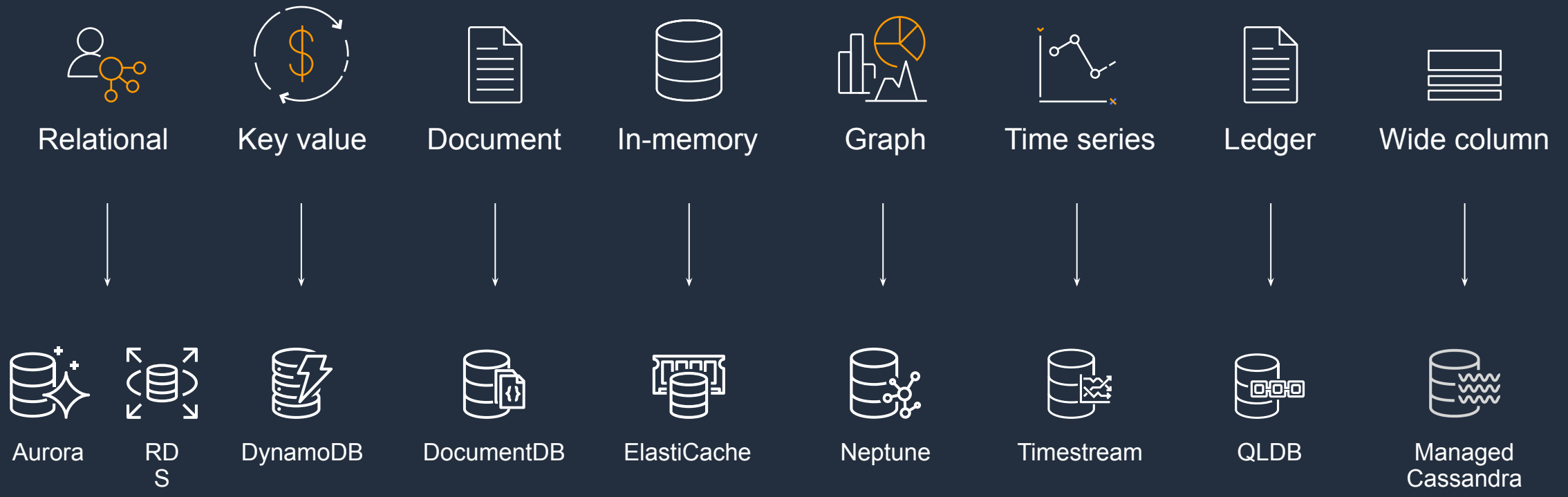
Purpose-built databases at AWS



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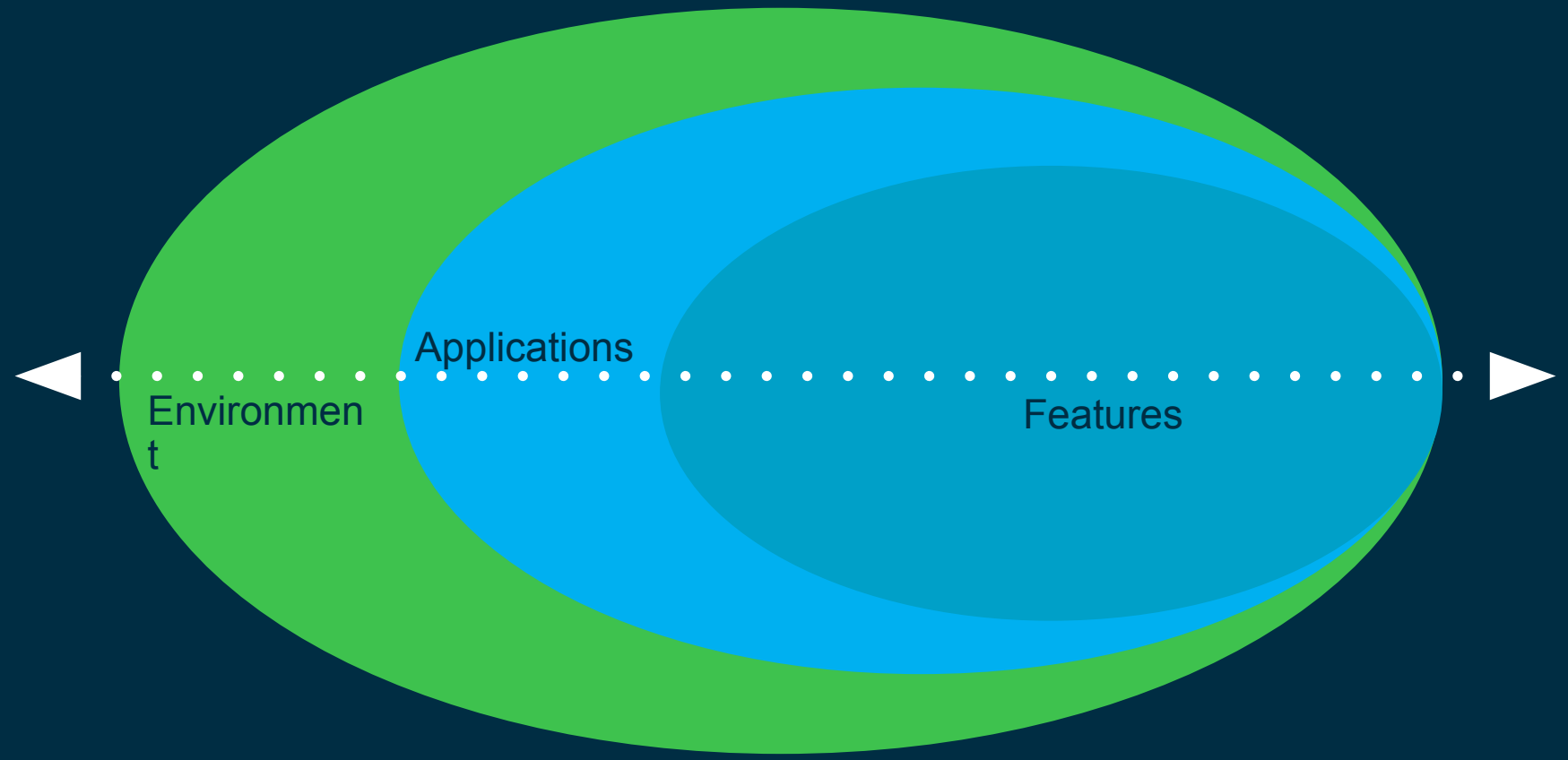
Risk of introducing changes

…may result in unavailability, reduced performance, adoption



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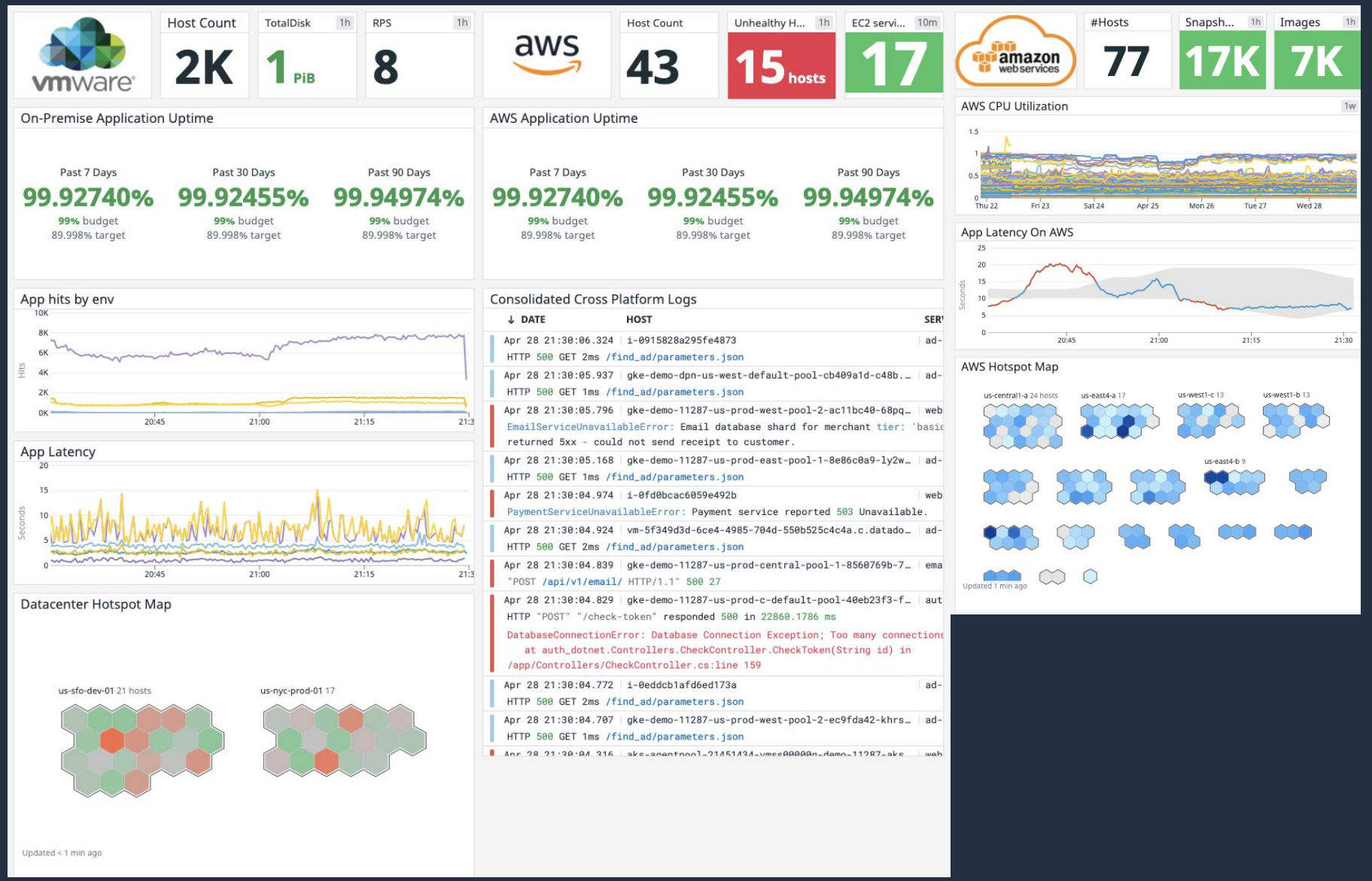
Monitor for reliable service health during re-platforming



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Observability

Review from ep1: Observability

Four Golden Signals

Four Golden Signals

Latency

Traffic

Errors

Saturation

Four Golden Signals: *Latency*

- Direct impact on customer experience.
- Where and how you measure is key.

Four Golden Signals: *Traffic*

- The amount of work being done—or attempted.
- Direct relationship to business value.

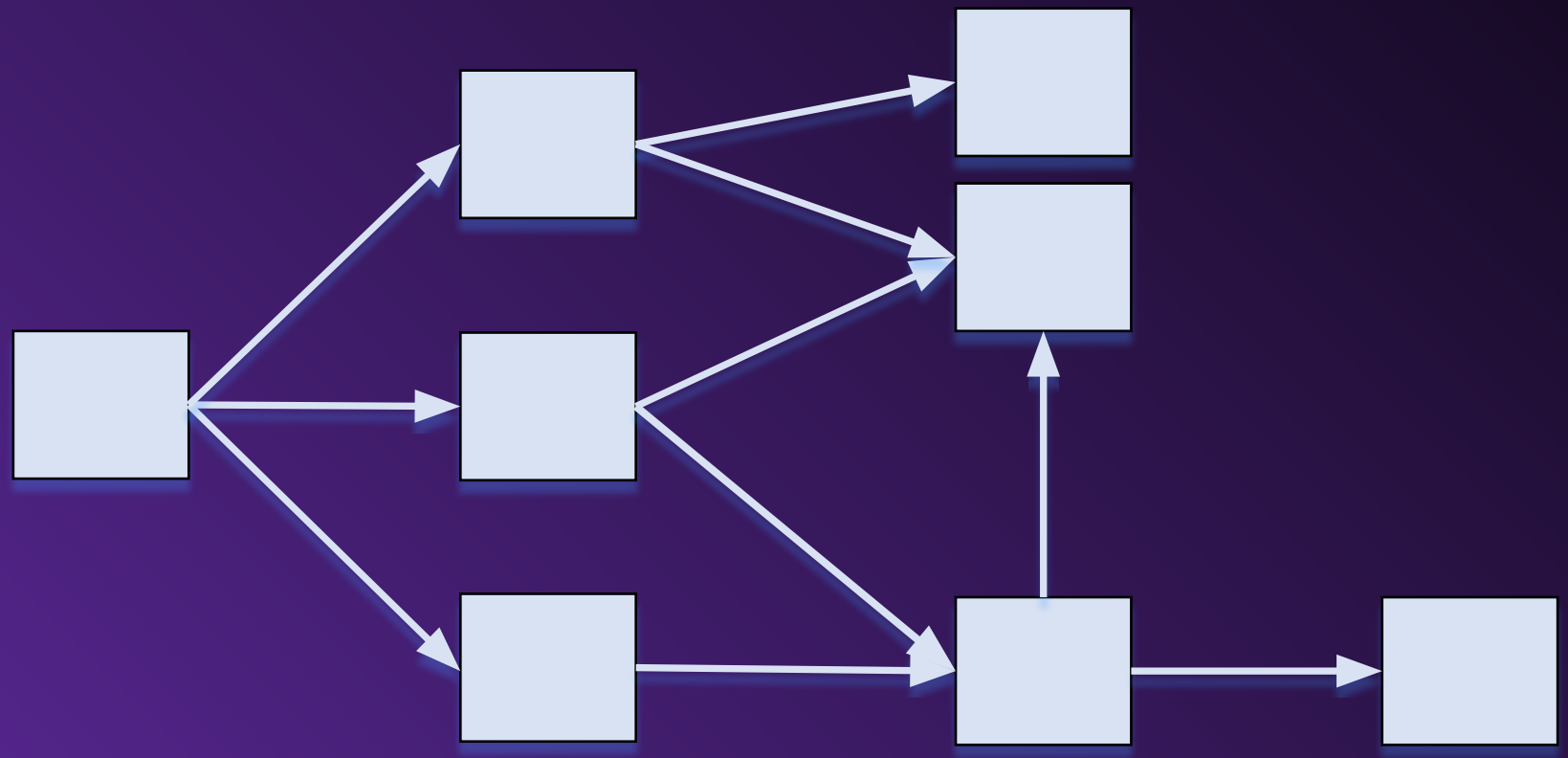
Four Golden Signals: *Errors*

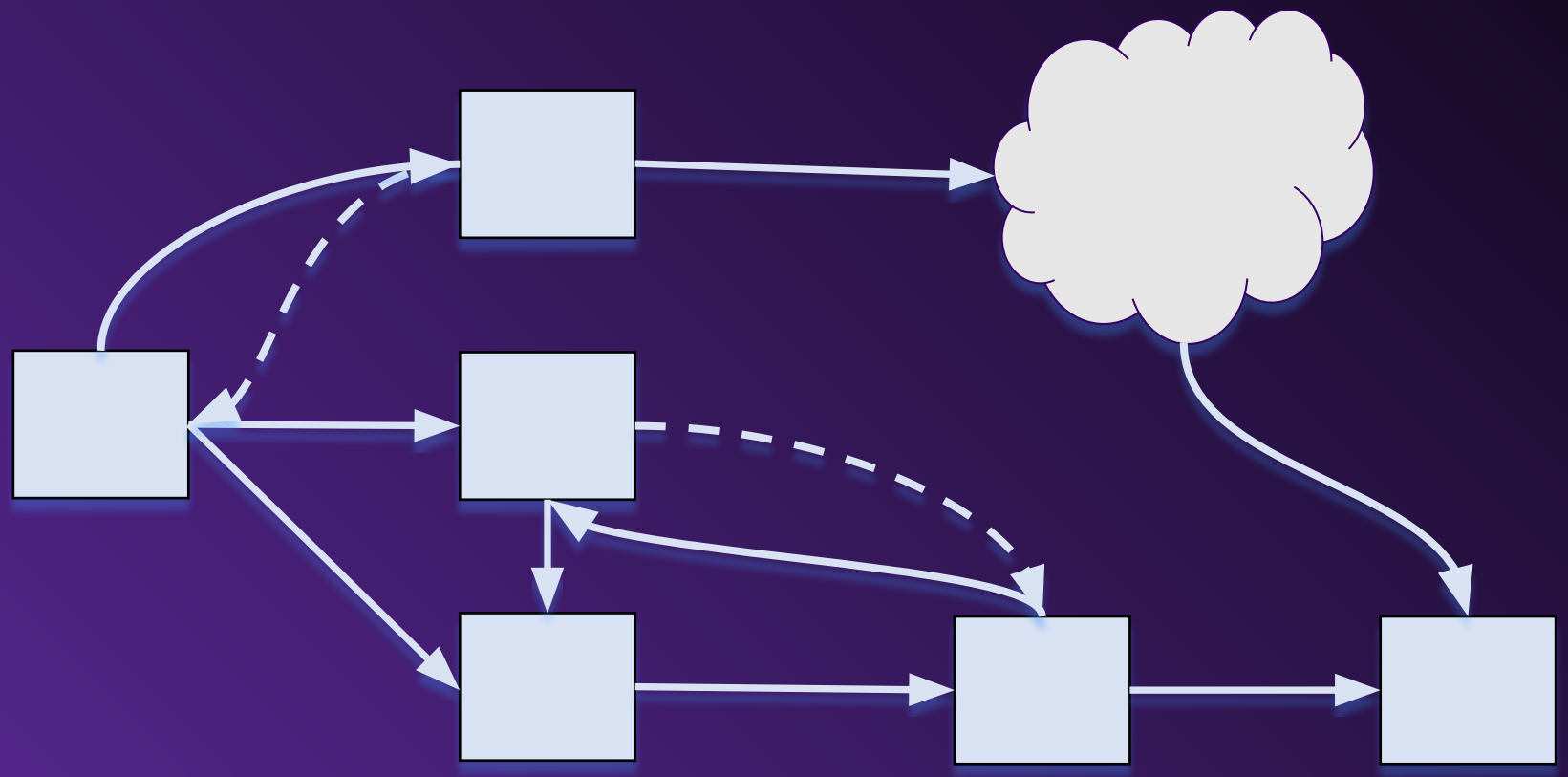
- A nice, defined target to aim at.
- Direct impact on customer experience.

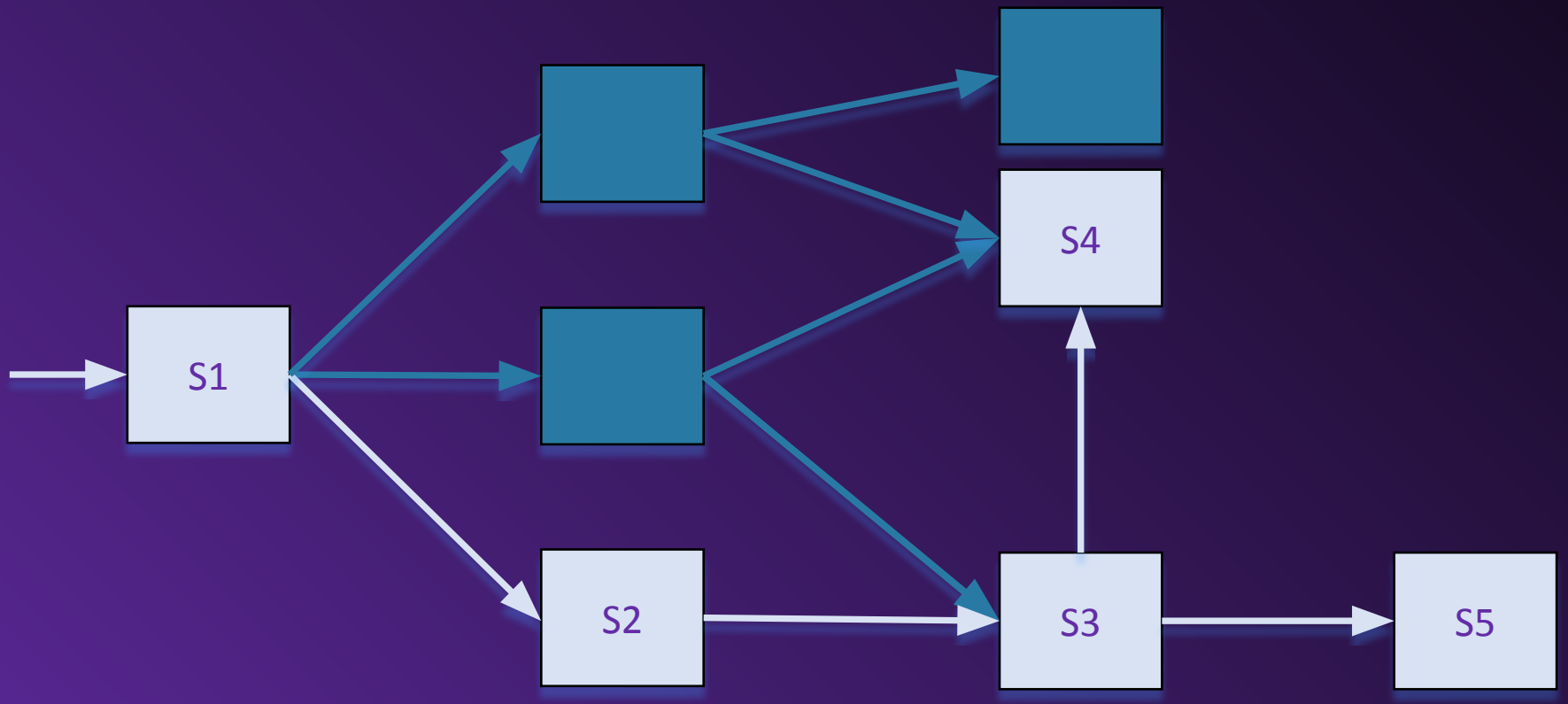
Four Golden Signals: *Saturation*

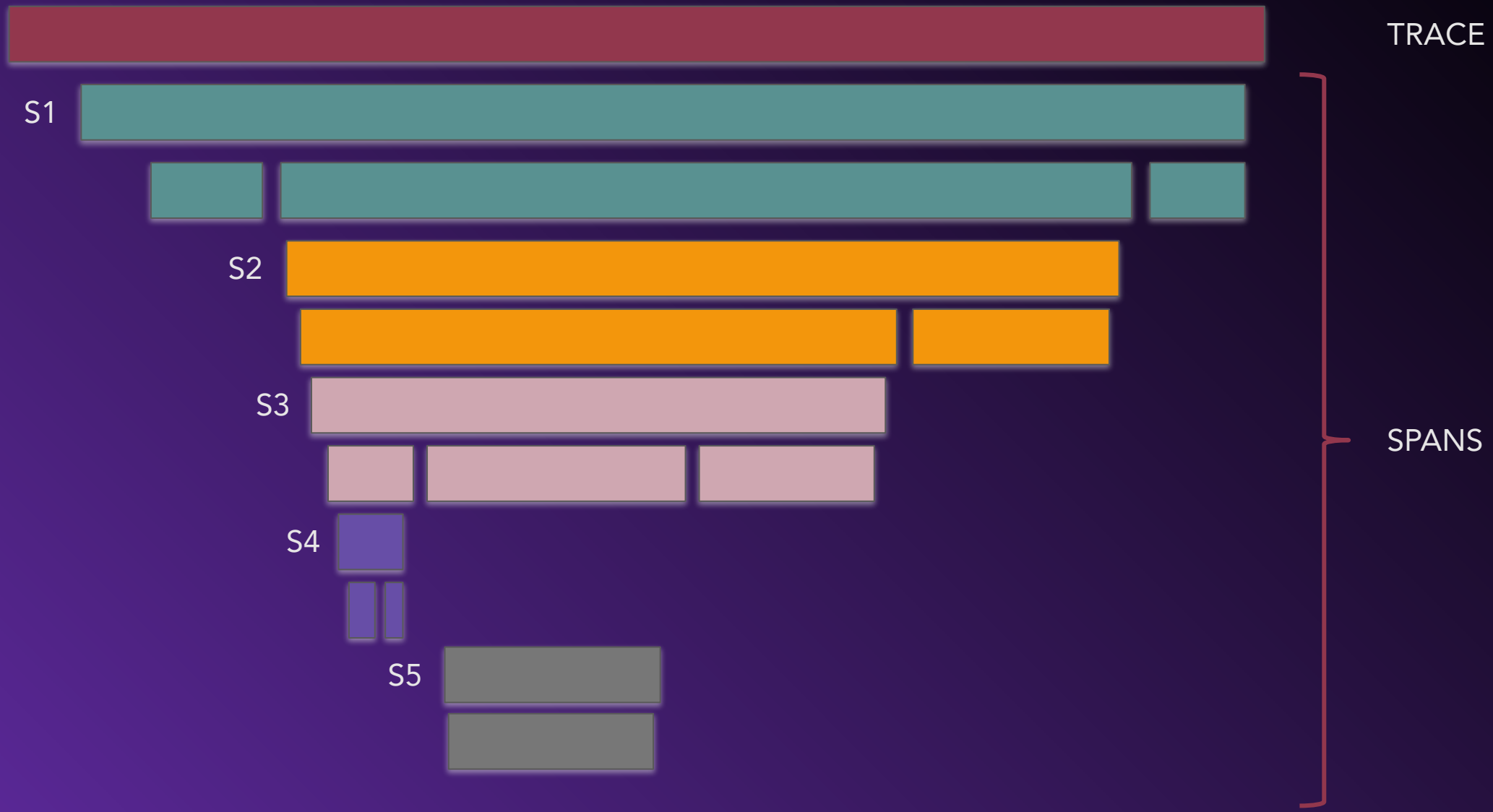
- Honestly, this is a tricky one. :)
- Direct relationship to both scaling and capacity planning.

Traces and APM



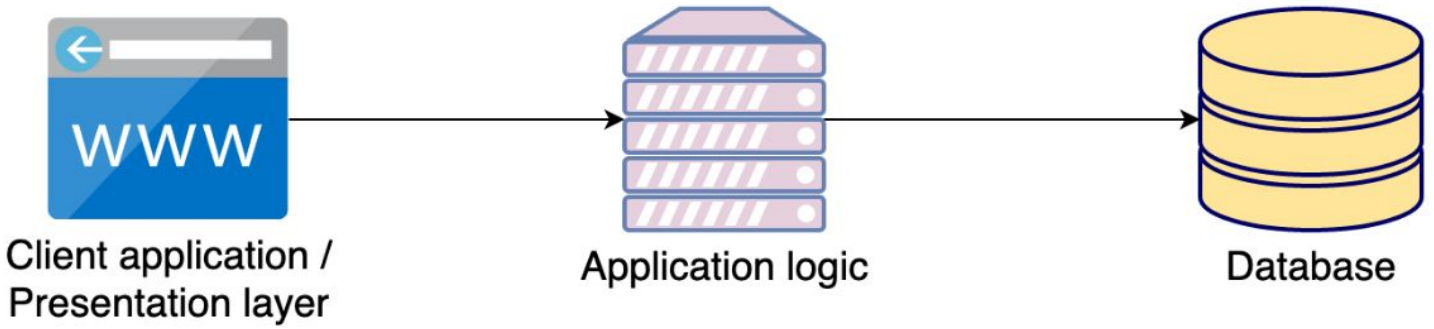


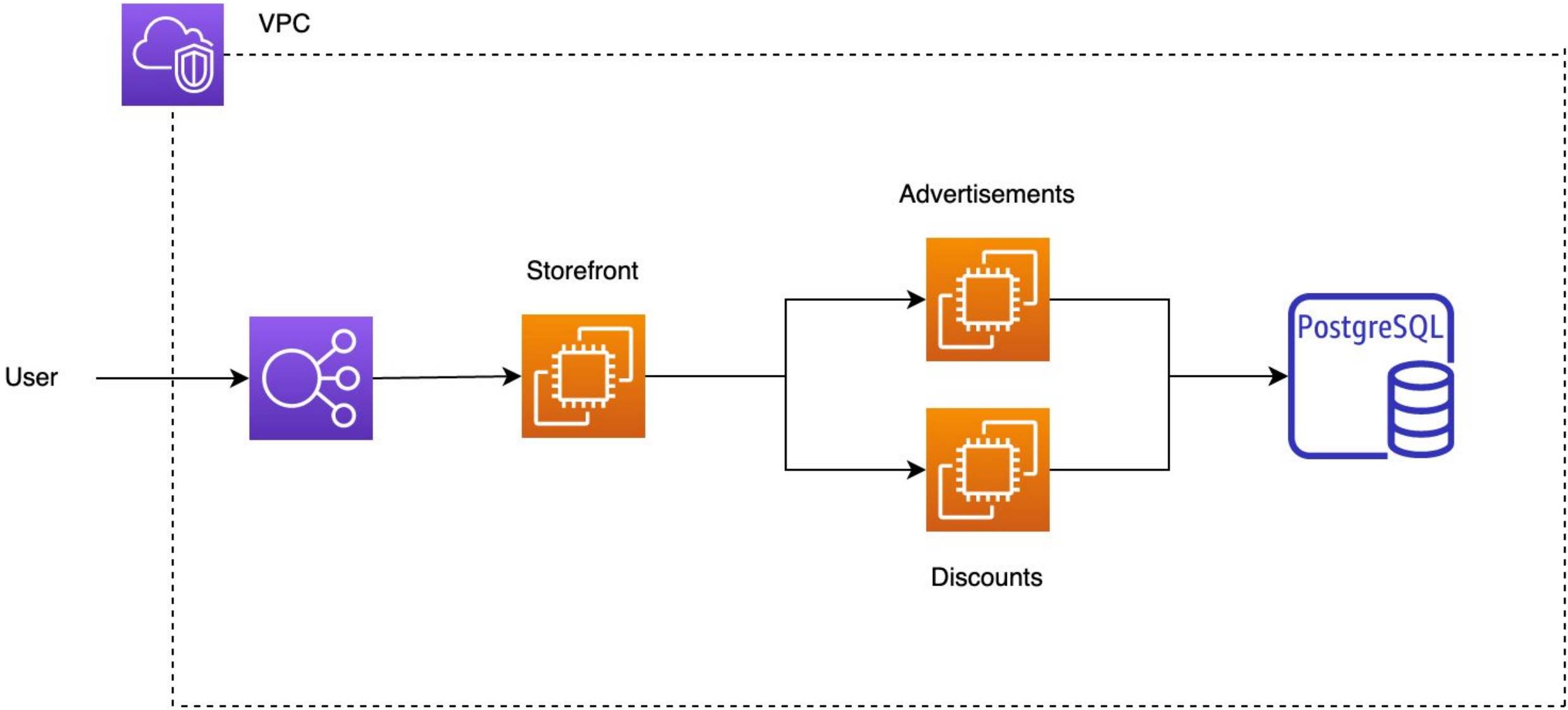

S1
S2
S3
S4
S5



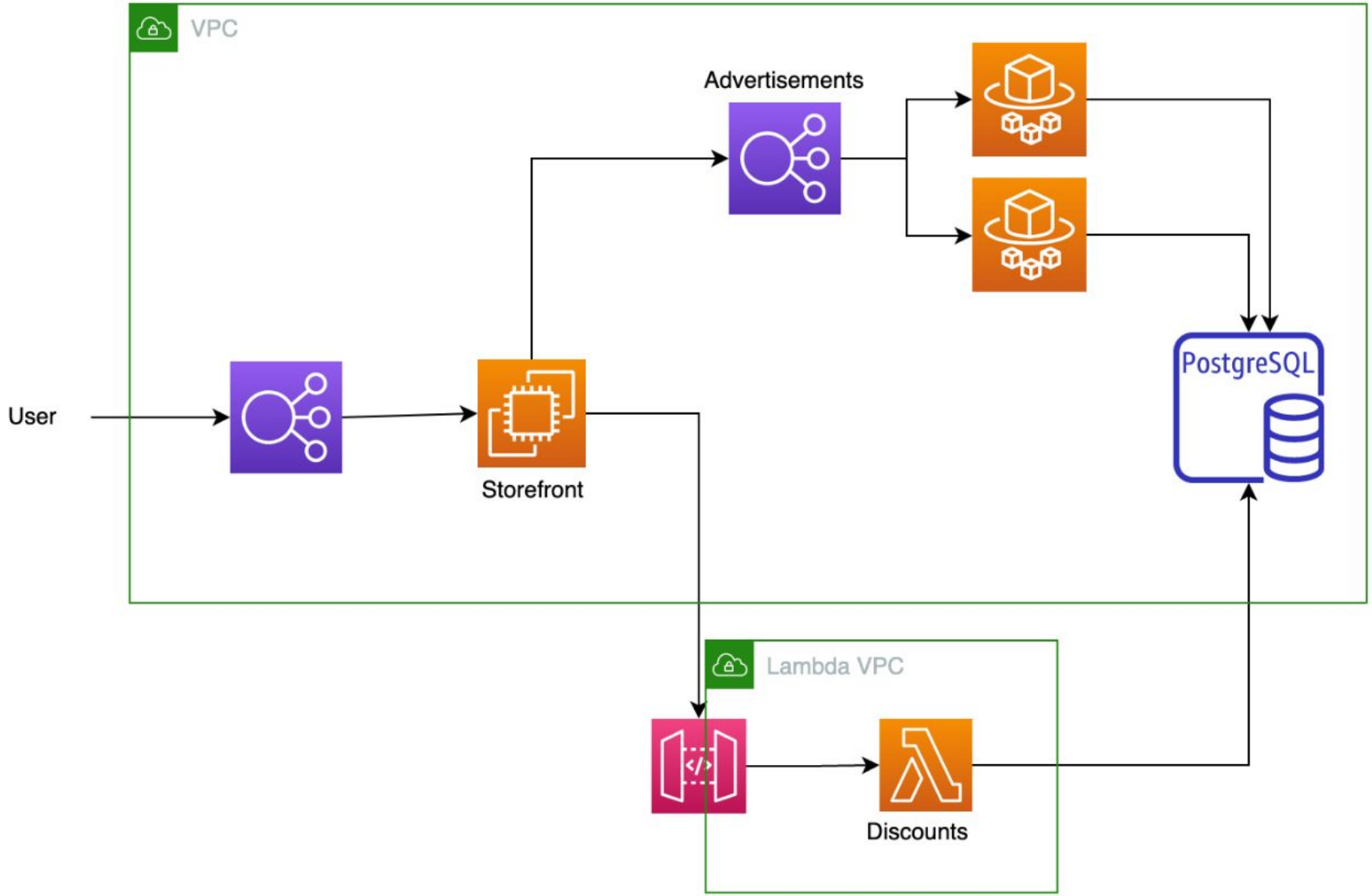
DATADOG

Demo


WWW
Client application /
Presentation layer
Application logic
Database


VPC
Advertisements
Storefront
User
PostgreSQL
Discounts

DATADOG aws


VPC
Advertisements
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Lambda VPC
Discounts

DATADOG aws