AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

ENT309

Moving up the technology stack as you modernize applications

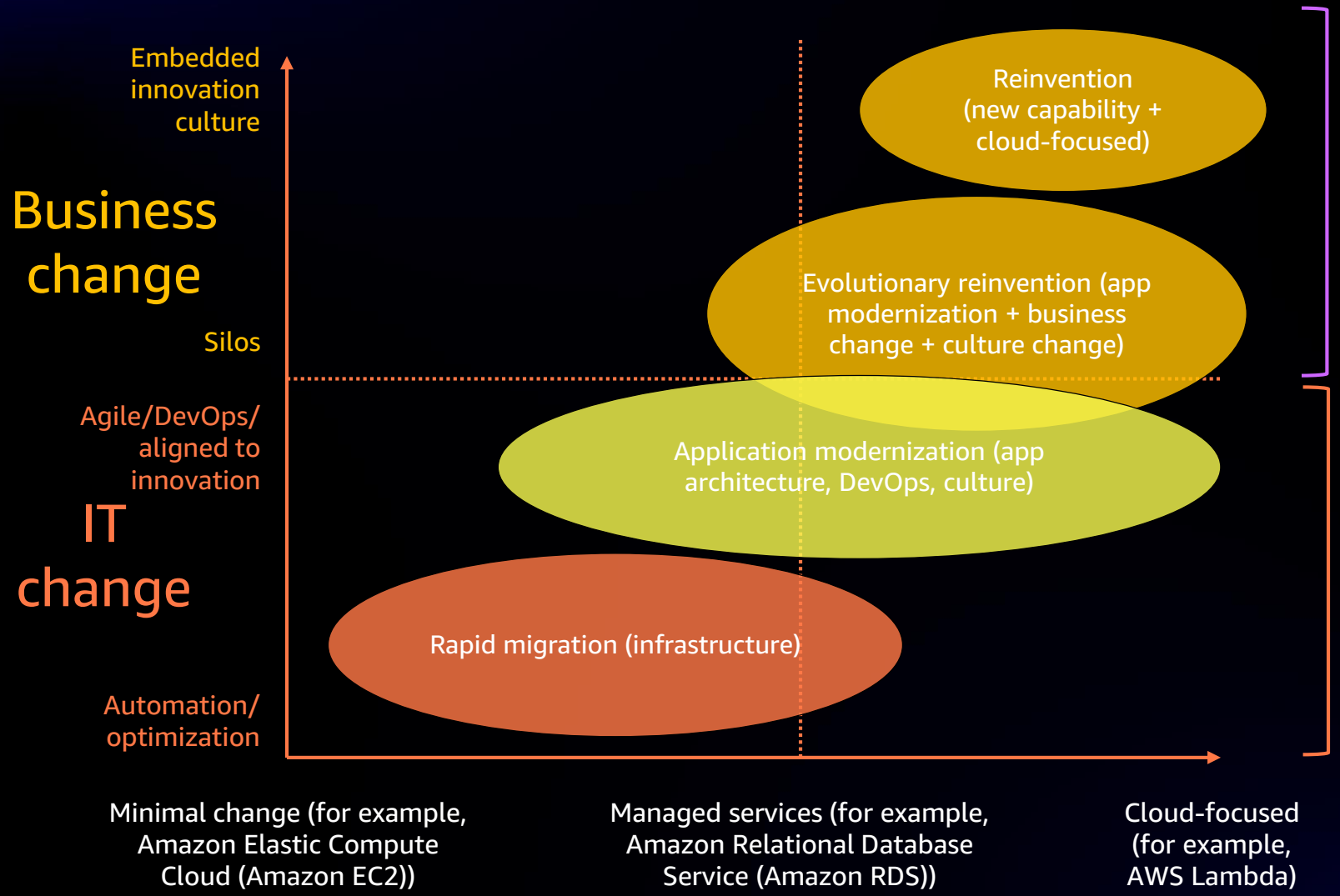
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A typical modernization roadmap



Value proposition

- Net new innovation
- New revenue streams
- New markets
- New capabilities

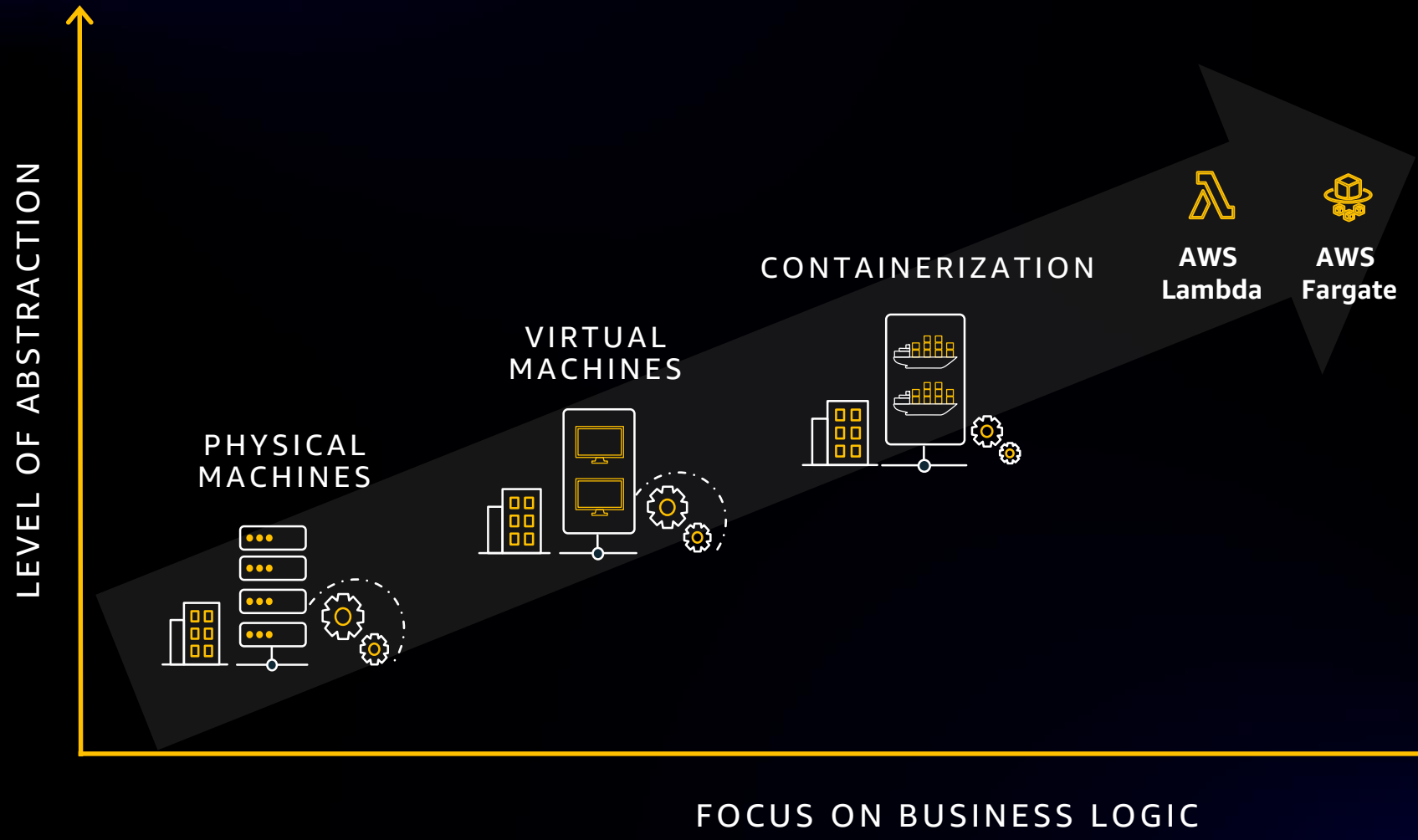
- Innovate
- Unleash data
- Break down silos
- New capabilities

- Cost reduction
- Resiliency
- Scalability
- Agility
- Platform for innovation

- Reduce tech debt
- Cost reduction
- Global reach
- Scalability
- Resiliency
- Security

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Move up the stack = less work for you



SERVERLESS

- Continuous scaling
- Fault tolerance built-in
- Pay for value
- Zero maintenance
- Focus on business value

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Why AWS for modernization?



AWS offers customers a broad set of container and serverless compute offerings



AWS compute services offer deep integrations with the rest of AWS's 200+ service offerings



AWS supports and adopts open source software and contributes back to the environment



AWS releases services and features at an accelerating rate: 2016 – 1,000, 2017 – 1,430, 2018 – 2,000

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What is the best way to build a modern application?

Modular services

As serverless as possible

Automated, abstracted, and standardized

Programmatic guardrails

De-coupled and purpose-built

1 Architectural patterns

2 Operational model

3 Developer agility

4 Management and governance

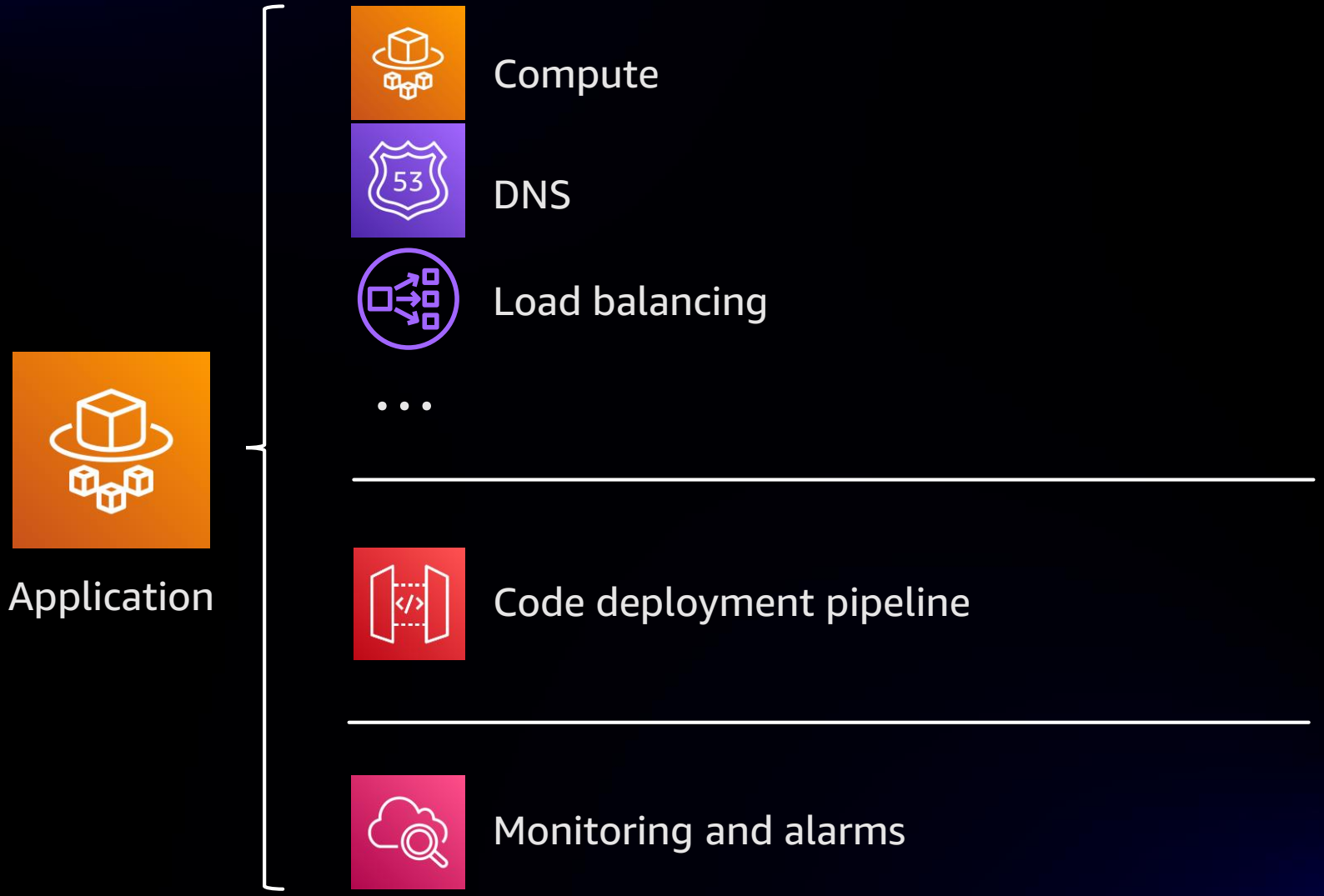
5 Data management

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Modernizing operations and developer experience

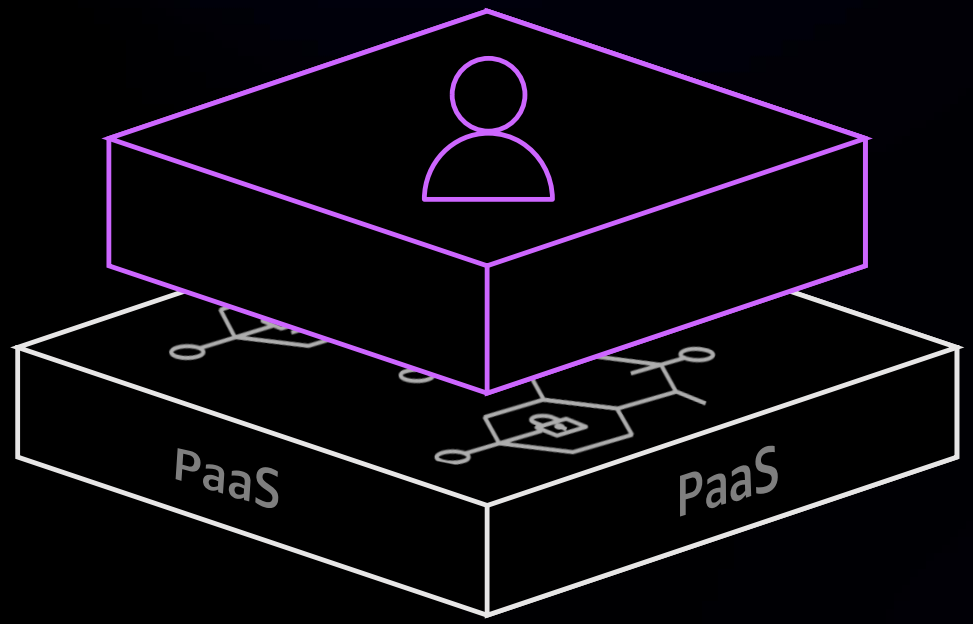
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“Simple” is not so simple



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Abstract away operator pain



- Creating a developer platform is hard
- You need to construct a consistent stack to improve developers' productivity and to provide better guardrails for protection
- Managing and updating hundreds or thousands of deployed microservices is difficult and time-consuming

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AWS Proton

Increase control over your cloud infrastructure and
accelerate the pace of innovation for your development teams



Infrastructure operators

Create application infrastructure templates



AWS Proton

Monitor and update deployments



Development teams

Find and deploy application infrastructure

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Core features



Self-service interface for developers



Centralized management and visibility



Version control for templates



One-click upgrades to new versions



Infrastructure pipelines



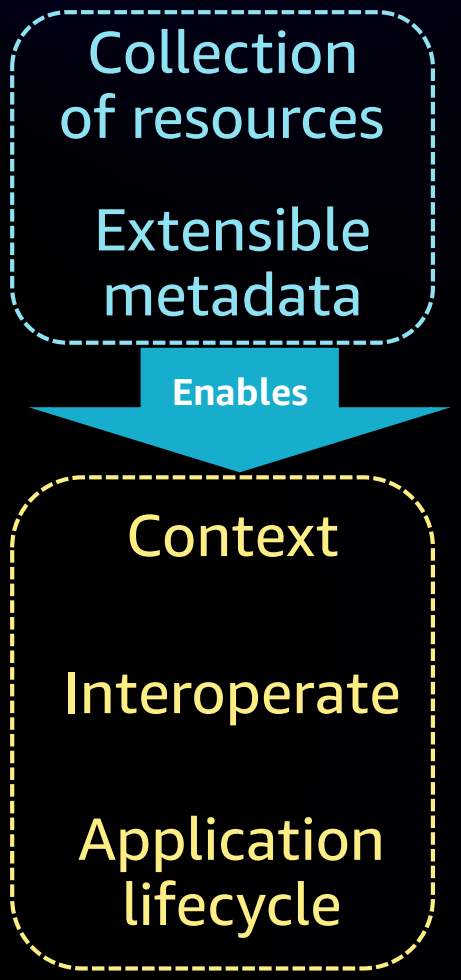
Third-party integrations

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AWS Service Catalog AppRegistry

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The need for an application-level abstraction



- I need a way to collect all of my application instances (workloads) across my dev, test, and prod environments and across my teams
- I need to associate data from different departments, internal systems, ISV tools, and teams to provide a holistic view

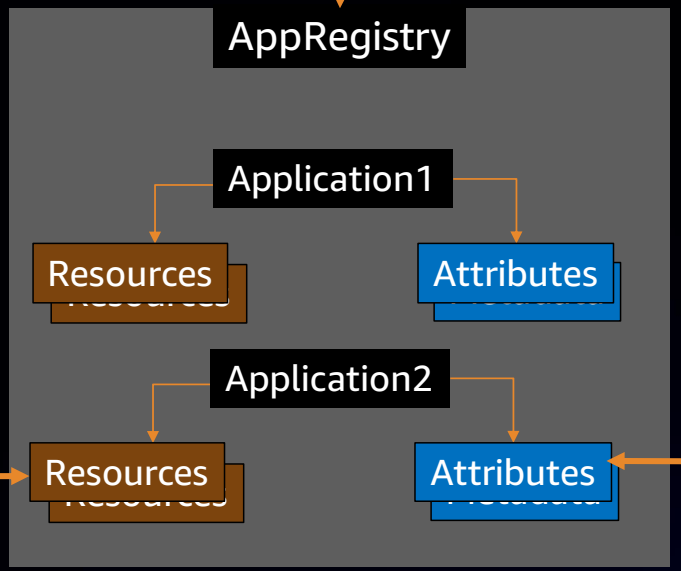
- How do I know if this EC2 instance is part of a production workload?
- I use AWS Systems Manager to perform operations on my application resources
- If I perform an operation (e.g., patch), which workloads are impacted?

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AppRegistry: Associate your stacks and extensible metadata to an application object

Application
A new application object to which you associate your application resources (AWS CloudFormation stack)

AWS Service Catalog
Define your applications



Resources
Application resource collections (e.g., an AWS CloudFormation stack)

Stack(s)

Associate

Attribute groups
JSON file(s) containing application metadata

Associate

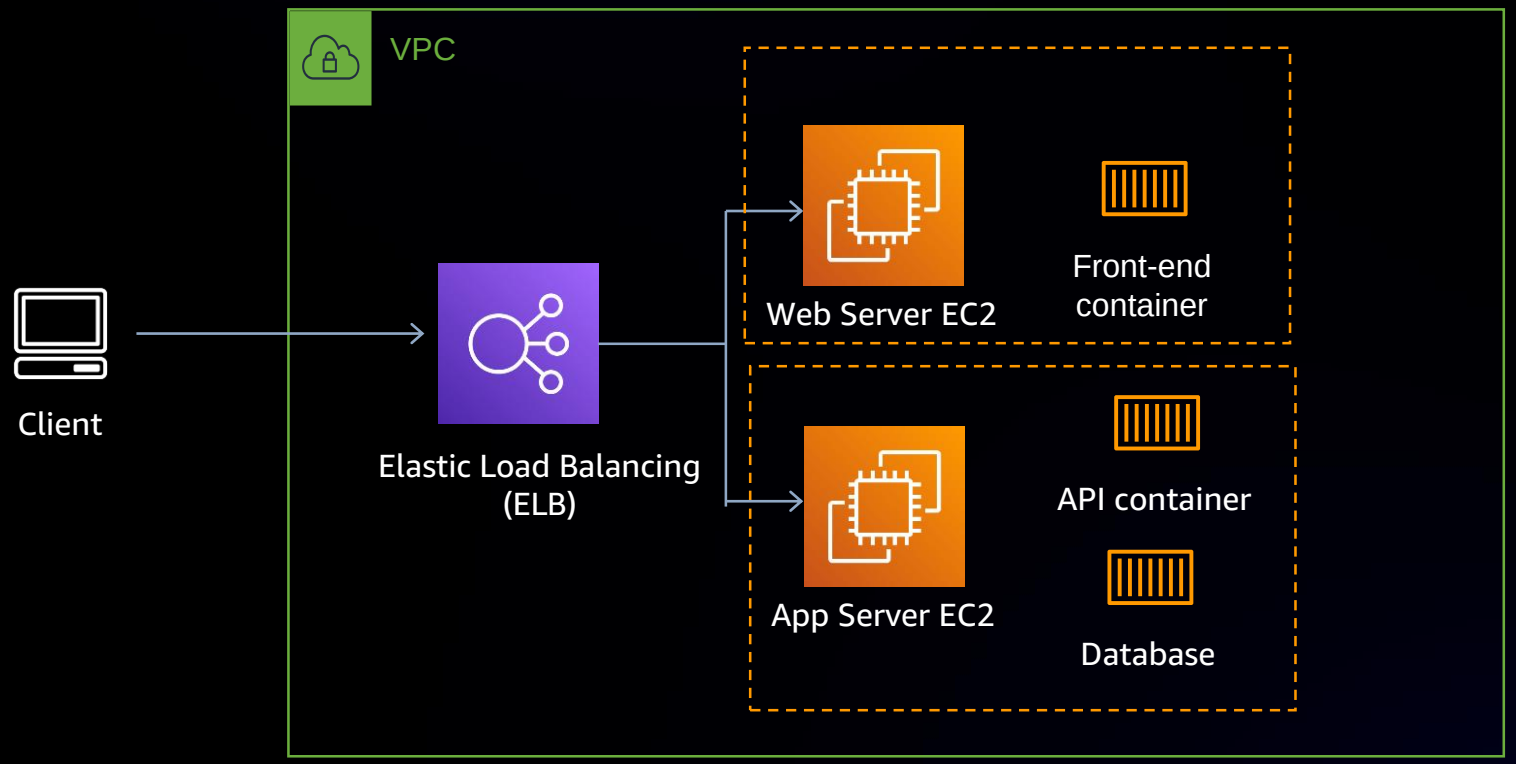
JSON file(s)

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Workshop architecture

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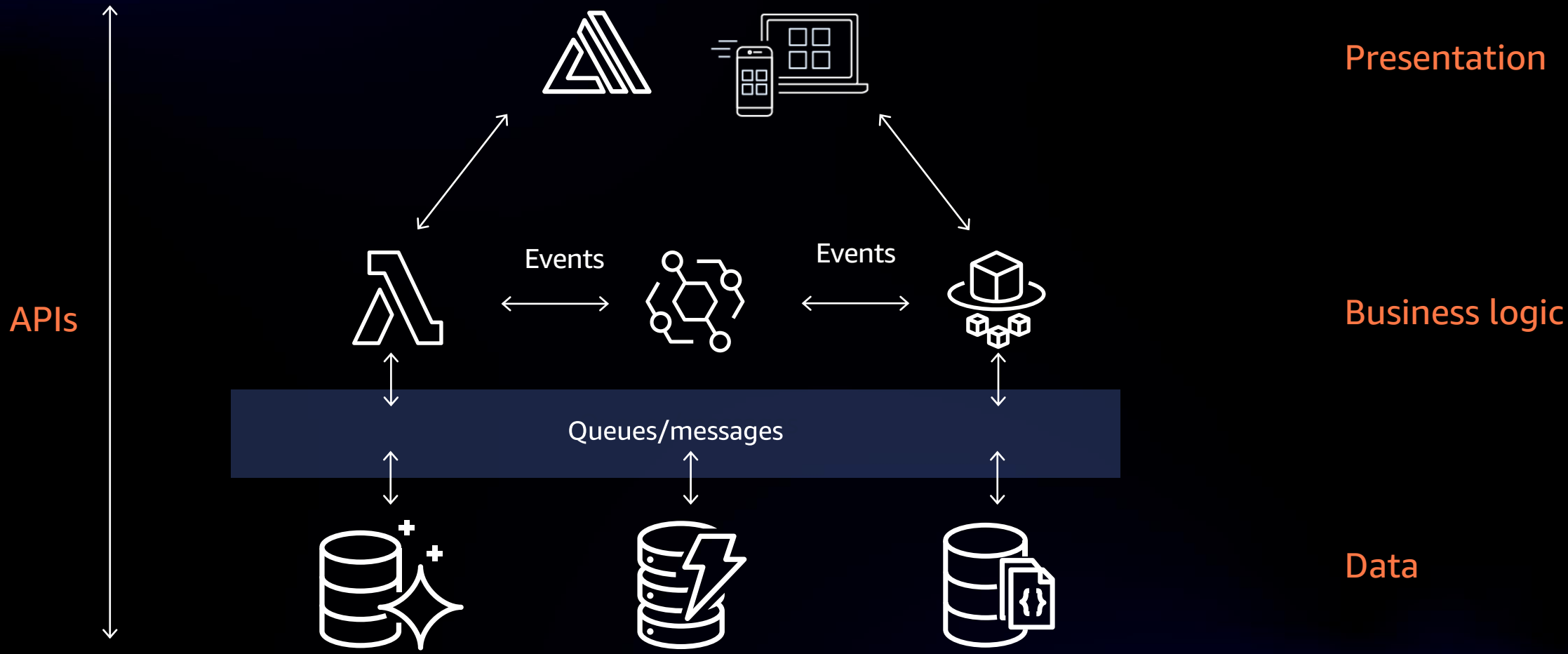
Modernize the monolith



- Decouple to microservices
- Moved to managed services
- Move to serverless
- Improve developers' productivity

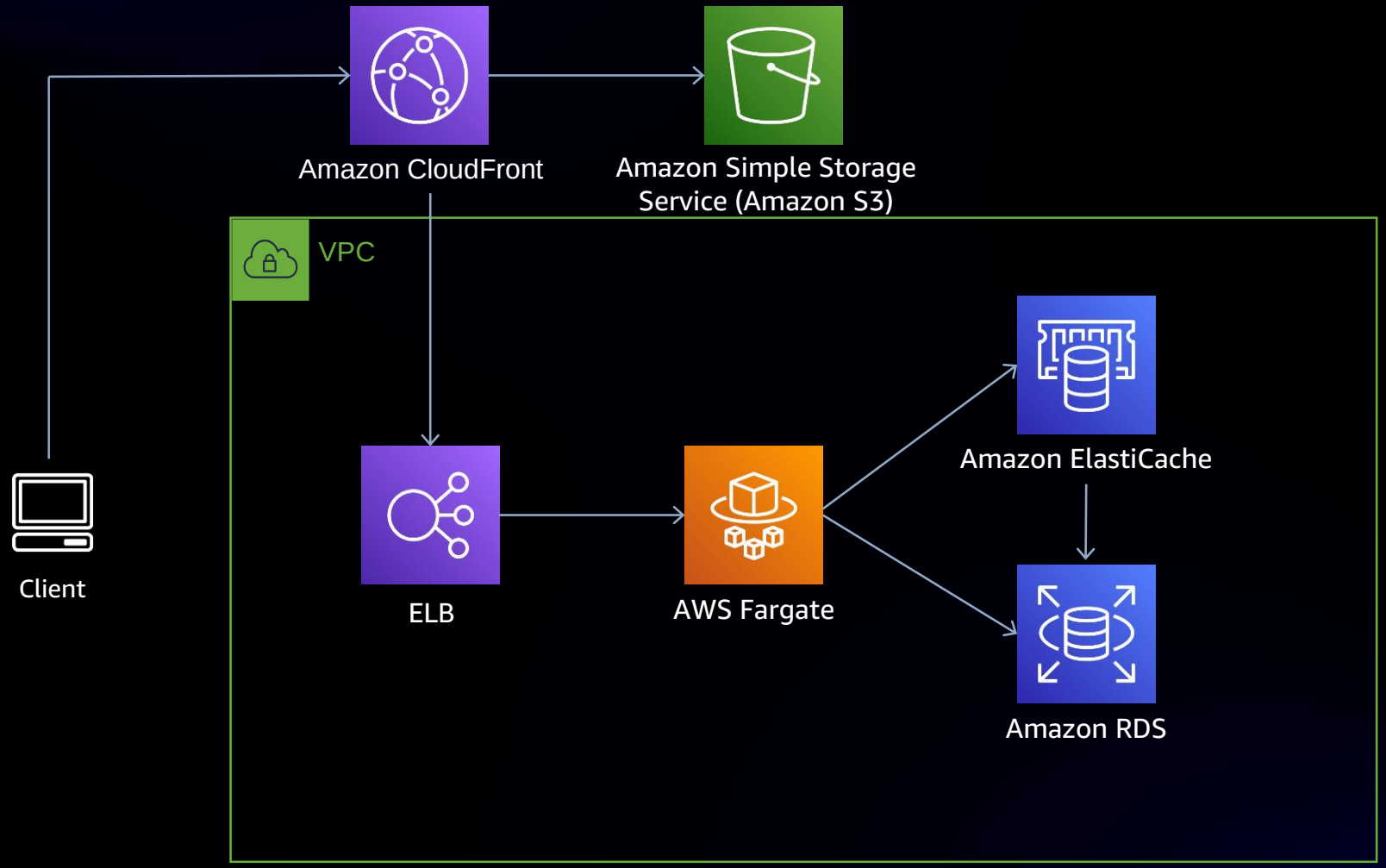
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A modern three-tier application architecture



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Modernize infrastructure



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Workshop walkthrough

- Modernize the monolith infrastructure
- Create governance model using AWS Proton
- Track modernized applications at scale using AWS AppRegistry

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Workshop information

Lab instructions

https://aws-samples.github.io/moving-up-stack-workshop

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Thank you!

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