AWS re:Invent

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ARC204

Modernize from traditional middleware applications to the cloud

Sabha Parameswaran
Sr. Solutions Architect
AWS

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Warm-up

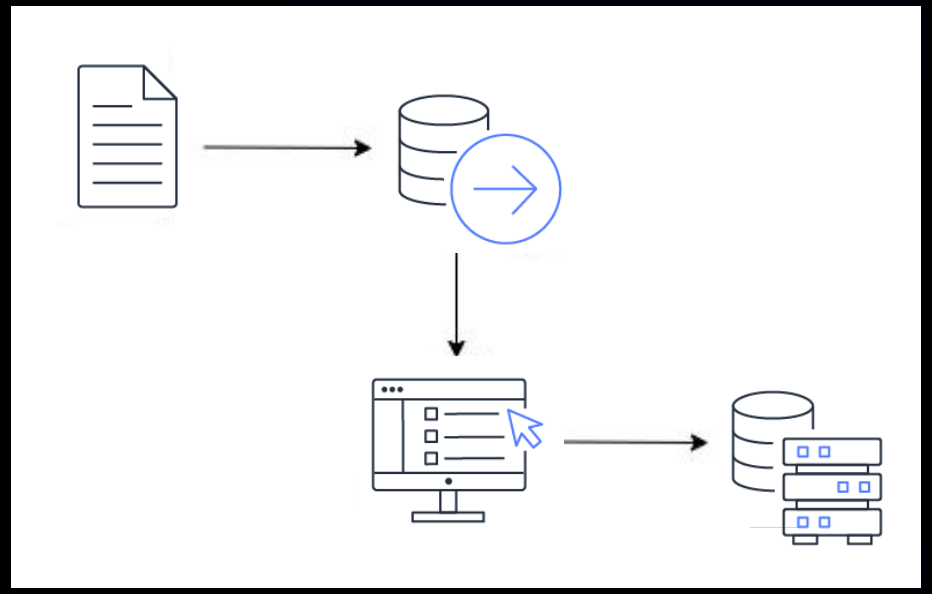
Scenario

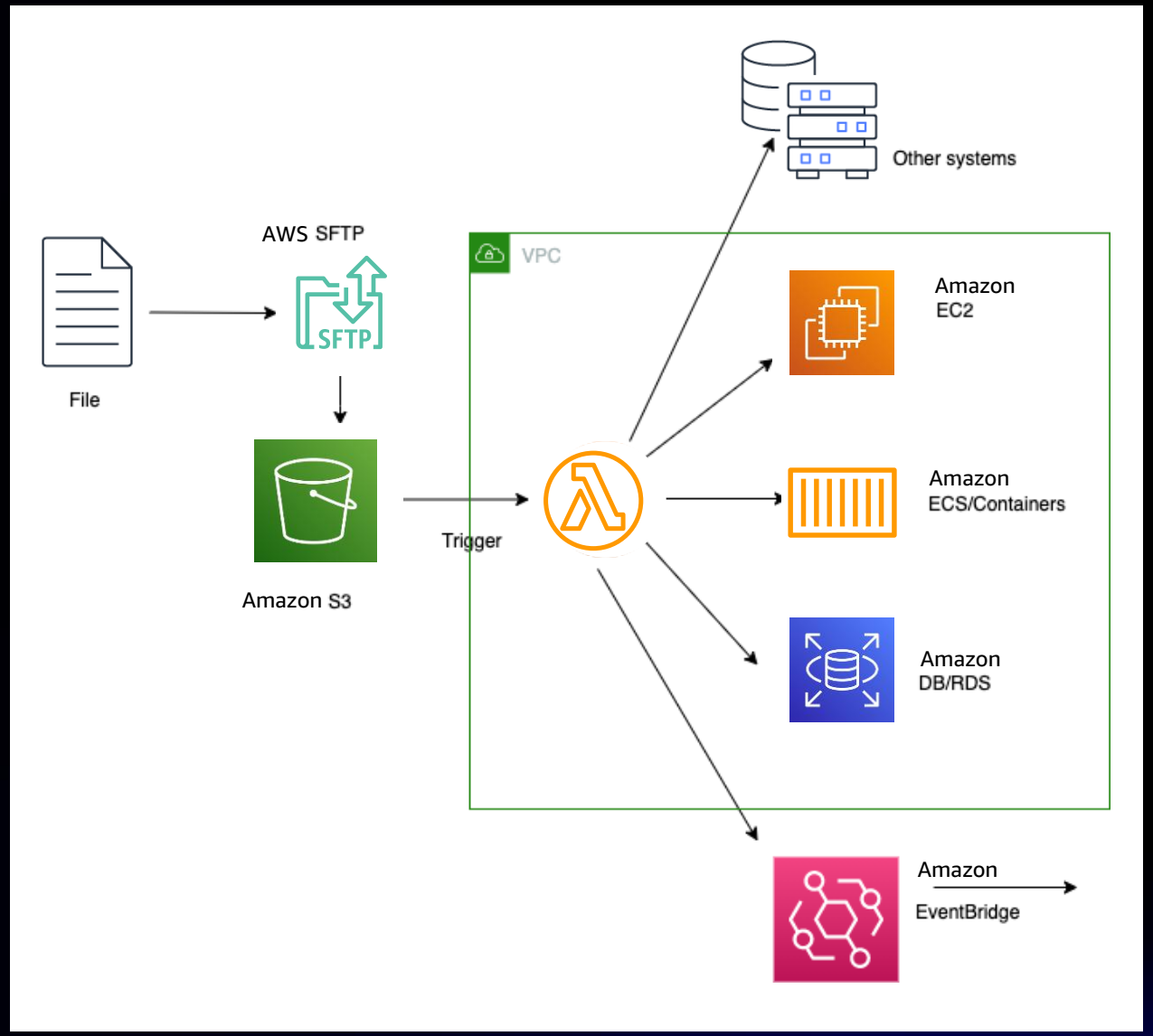
You’re an architect who needs to build a new integration that can:

- Handle file drops (FTP or copy to folder)
- Process files
- Submit the results to the backend system

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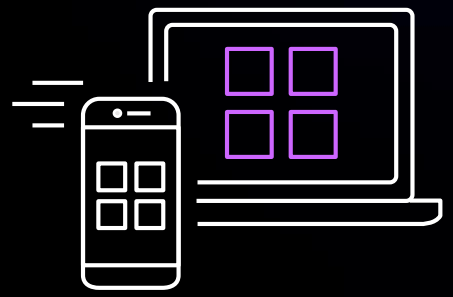
Solution





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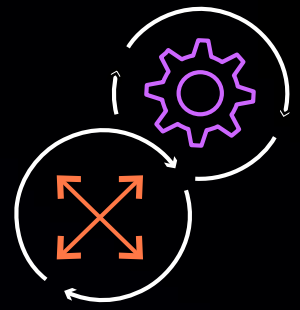
What do our customers need to drive success?



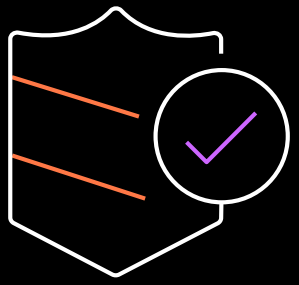
Get to market faster



Lower total cost of ownership



High performance and scalability



Security and isolation by design

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CIOs say that 80% of developers' time is spent on the operations and maintenance of applications, and only 20% of the time is actually spent on innovation

Source: Deloitte 2019

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Middleware workload modernization

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Key considerations

- Use case
- Performance
- Business

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Key patterns

- Stateless
- API first
- Prefer event-driven

Pattern: microservice architecture
https://microservices.io/patterns/microservices.html

The twelve-factor app
https://12factor.net/

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Leverage platform

- State management
- Scaling, HA, backup, DR
- Observability
- Security

- Manage infrastructure as code

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Choosing the right tool

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Tools

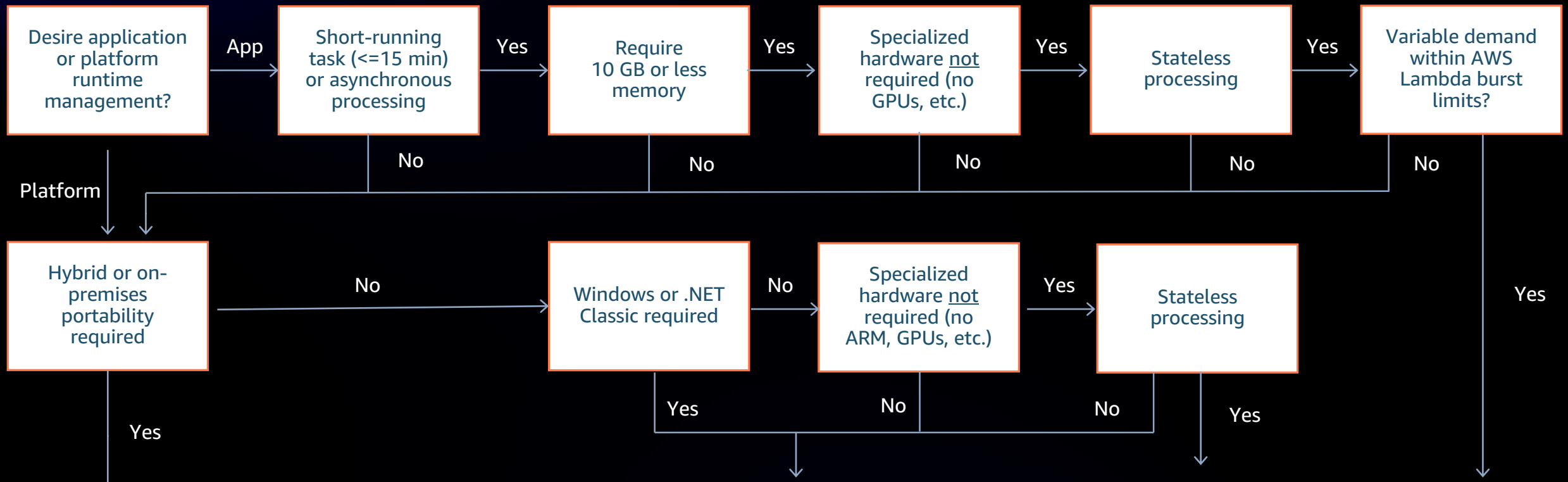


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Decision trees for modernization

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Compute decision tree



Amazon EKS

Amazon ECS (EC2-backed)

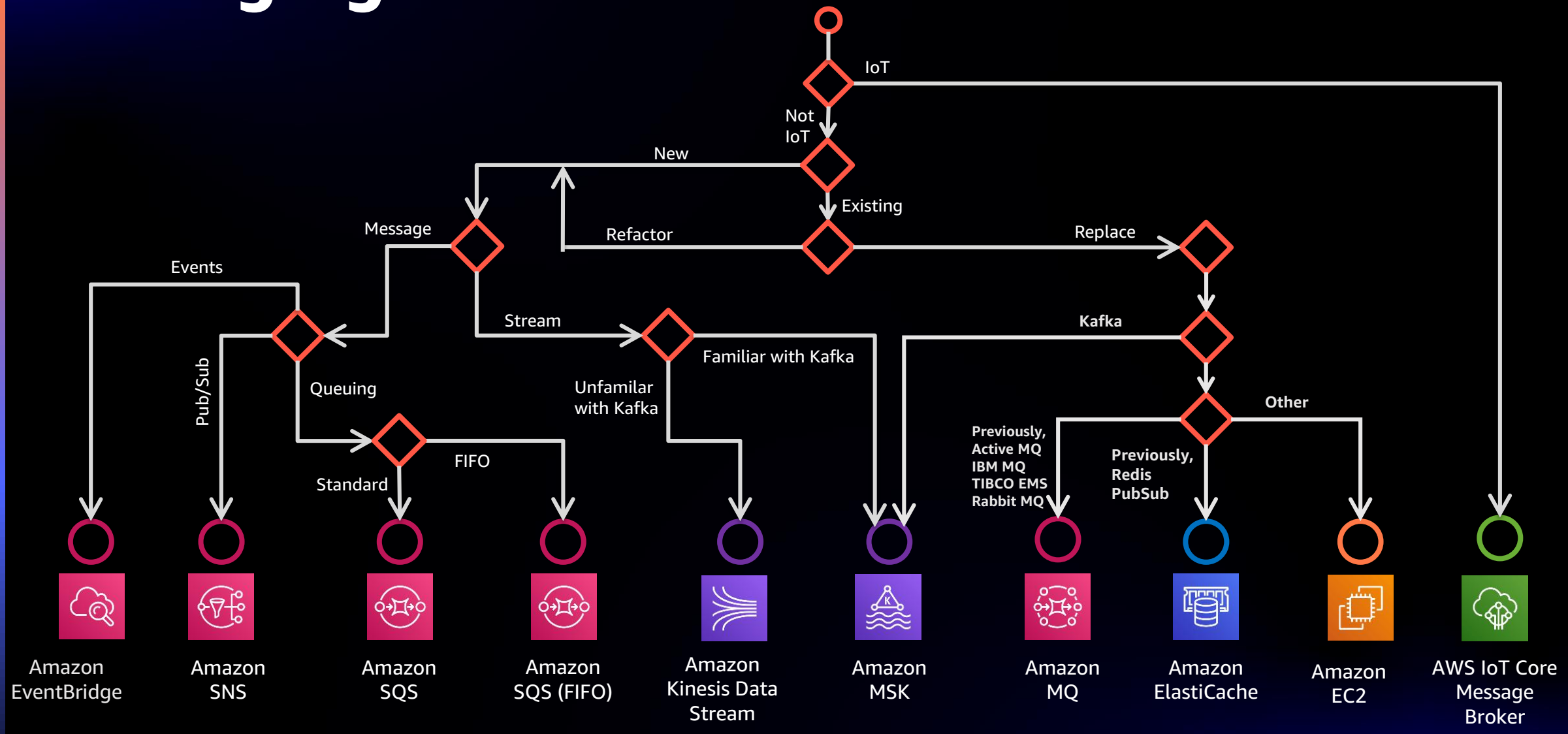
AWS Fargate

AWS Lambda

aws

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Messaging decision tree



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Scenarios

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Scenario 1

- Large set of files need to be processed periodically
  - 200 files come in a batch
  - Each file size ~300MB
  - The data needs to be validated, transformed and saved in backend systems

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Scenario 1.1

- Large set of files need to be processed periodically
  - 200 files come in a batch
  - Each file size ~300MB
  - The data needs to be validated, transformed
  - Come up with aggregated results and save in backend systems

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Scenario 2

- Client sending bursty traffic that can change dynamically
  - System has to handle the scale, client not expecting response
  - Handle the validation and processing

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Scenario 3

- Application handling spiky loads and needs automatic scaling

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Scenario 3.1

- Application handling ~~spiky~~ steady loads
  - Needs to remember state, cache large datasets and use for subsequent calls

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Scenario 4

- Application needs to interact with different services and implement remediations if things fail in between
- Might require complex wait, retry logic, and failure handling

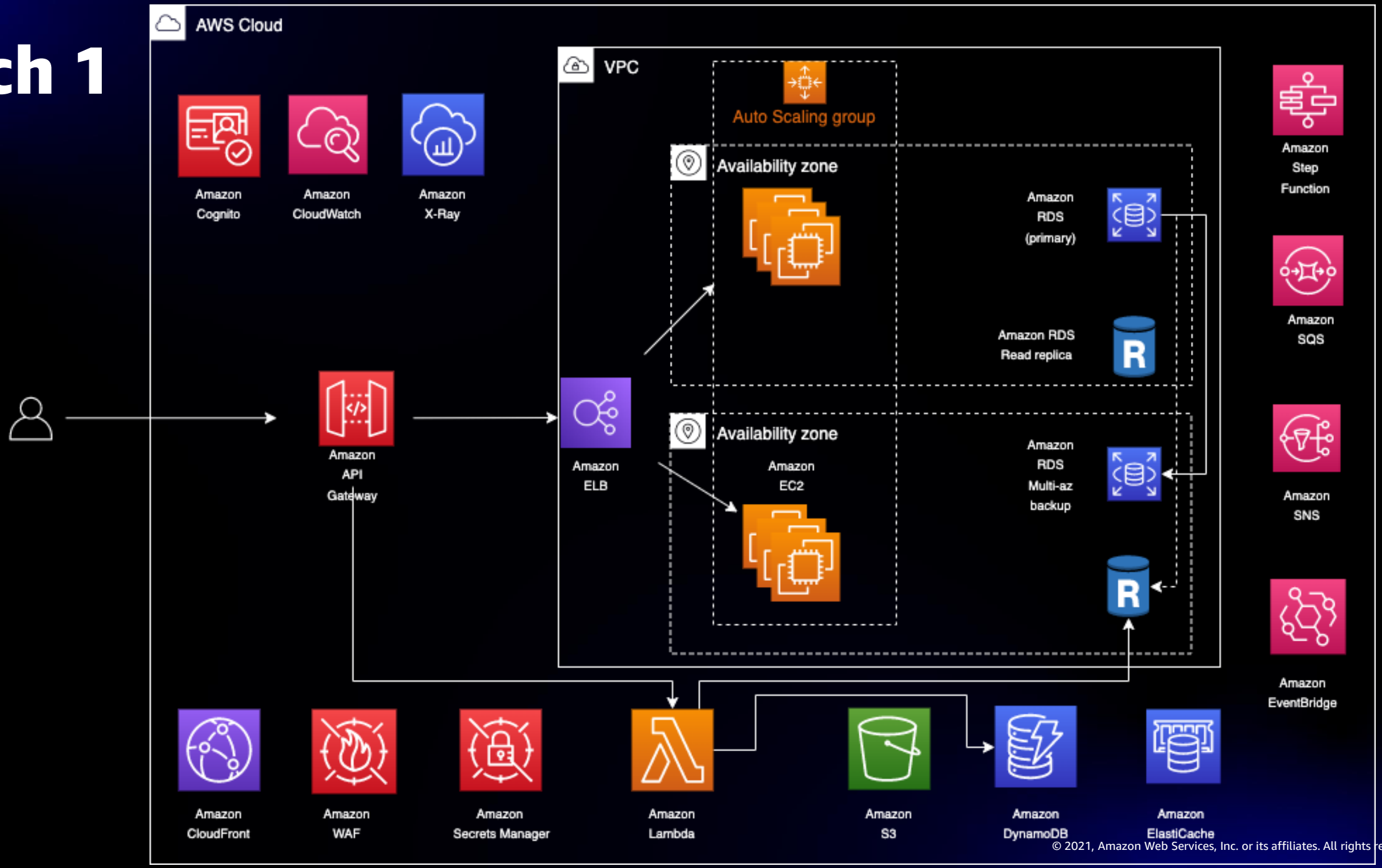
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Scenario 5

- Expose system to external partners/customers that require a response, but might involve long or unpredictable processing

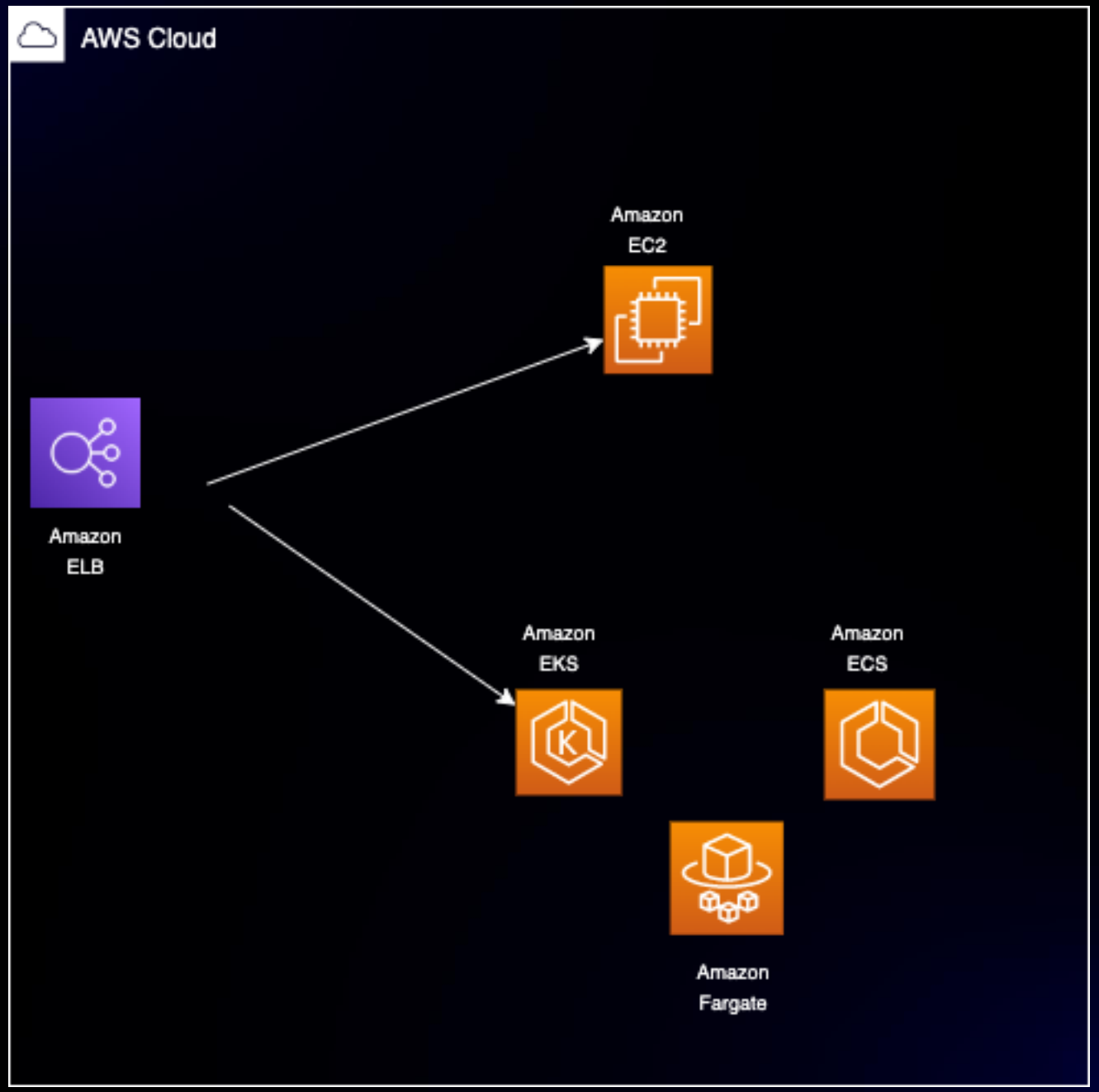
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Arch 1



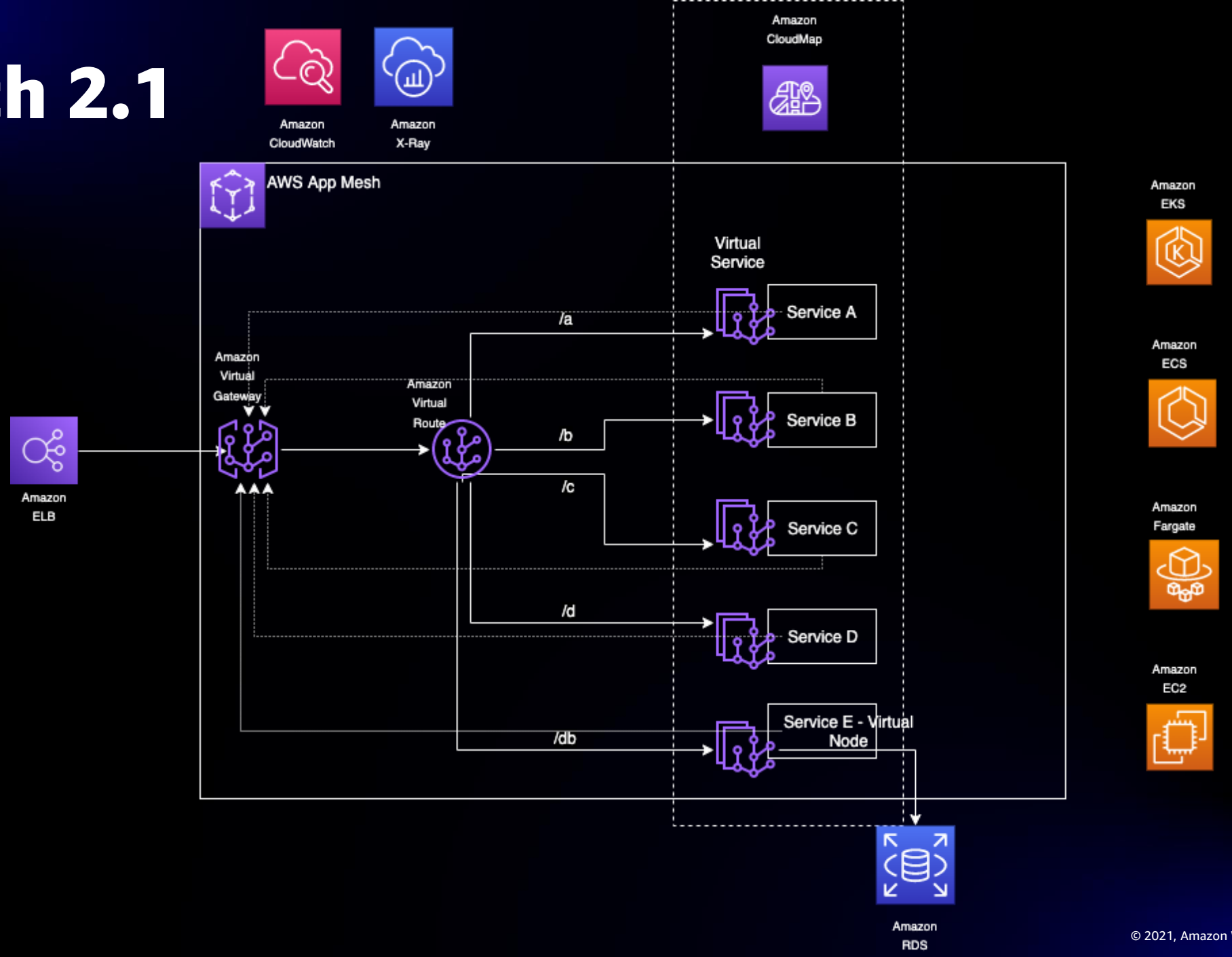
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Arch 2



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Arch 2.1



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Thank you!

Sabha Parameswaran

sabhap@amazon.com

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