

The background features a vibrant, multi-colored gradient. It starts with a dark blue on the left, transitions through purple and magenta, and then into bright orange and yellow towards the right. A diagonal line separates the darker blue on the left from the lighter colors on the right.

AWS
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ANT340-R

How Equinox built serverless data applications with AWS

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Agenda

What is serverless?

How did we get here?

Adoption of serverless by Equinox

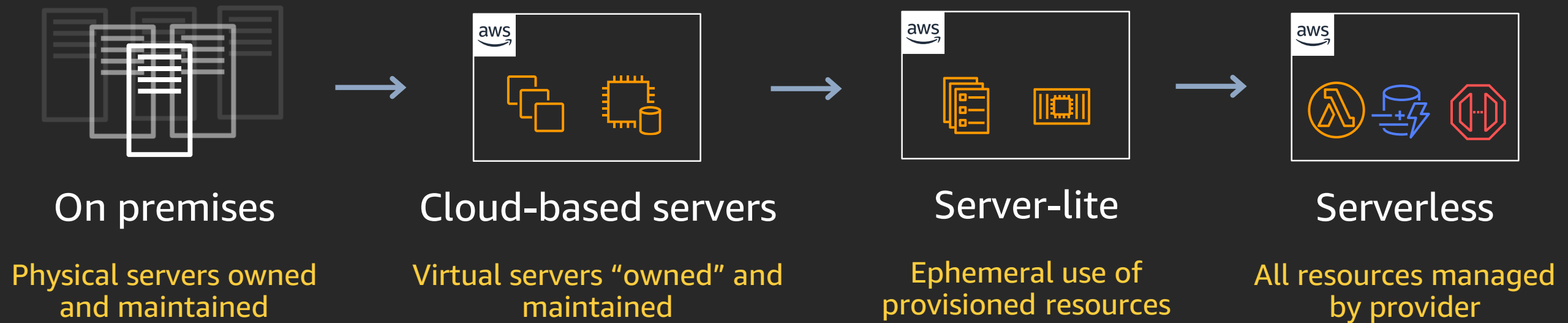
- Data lake
- Data extract, transform, and load (ETL)
- Data platform

Definition of serverless

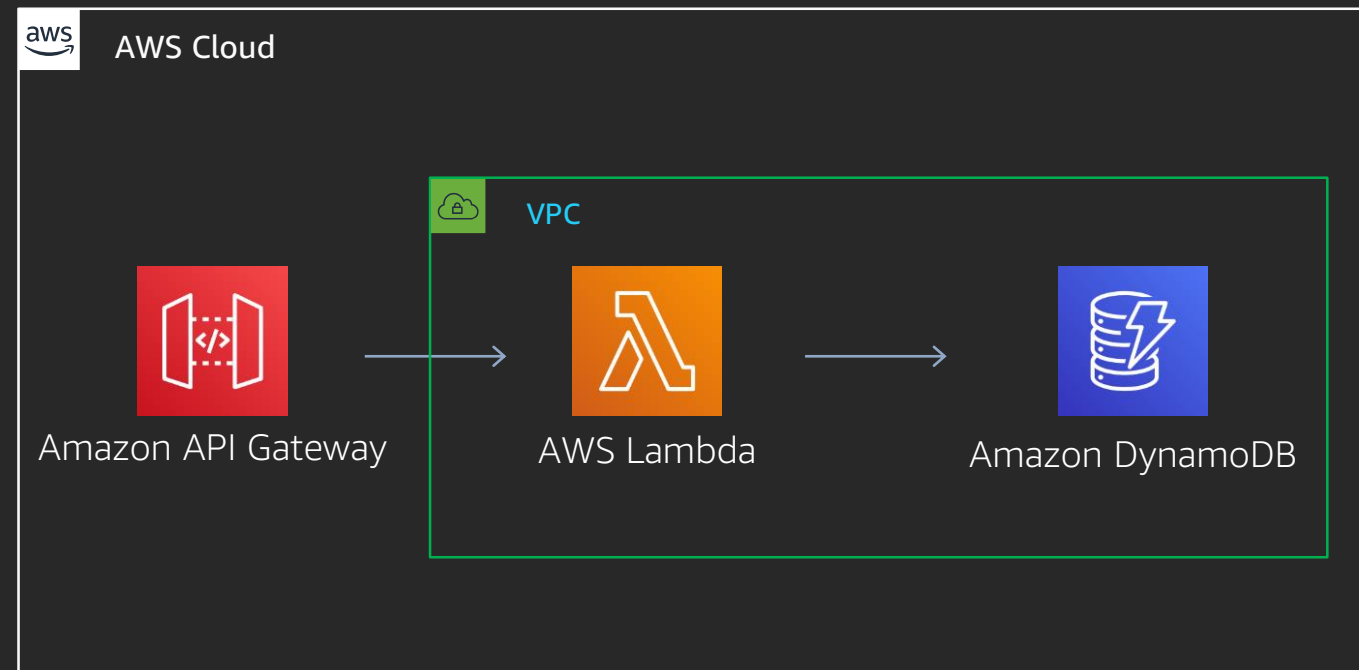
Definition of serverless

Serverless computing is a cloud-computing execution model in which the cloud provider runs the server and dynamically manages the allocation of machine resources. Pricing is based on the actual amount of resources consumed by an application, rather than on pre-purchased units of capacity

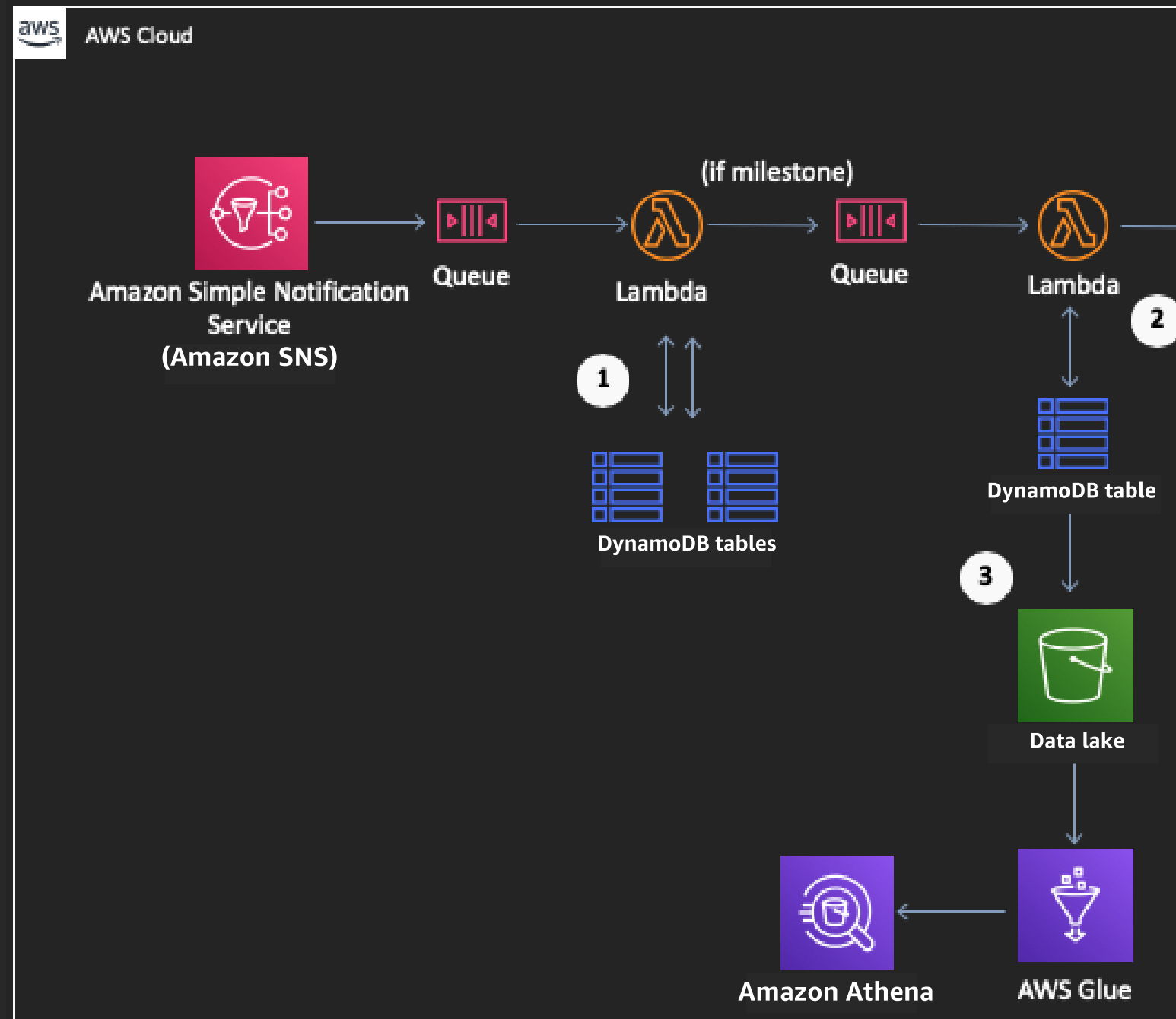
Serverless follows the trend in computing



Basic three-tier serverless application example



Serverless can include more complex applications

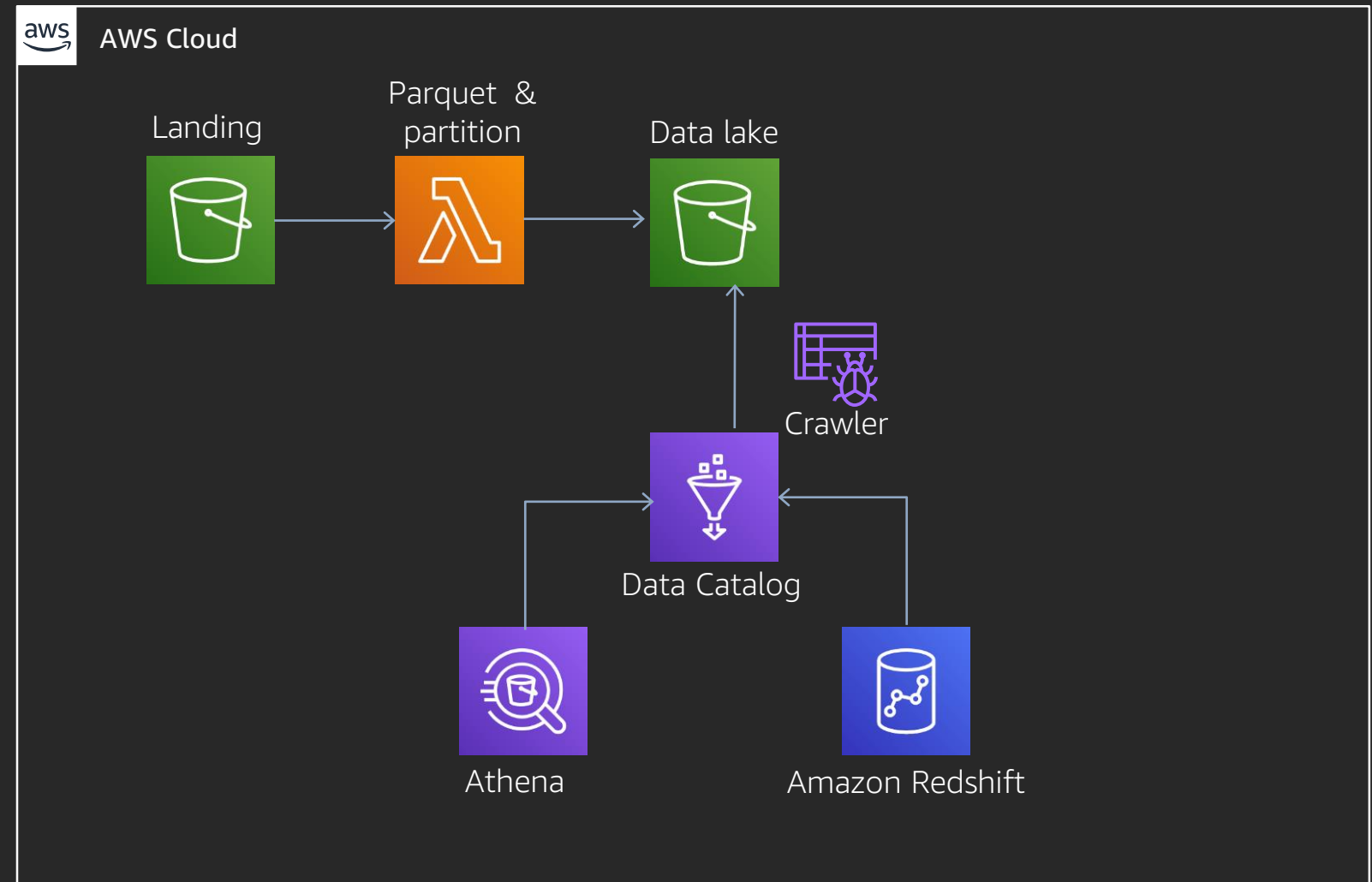


Architecture #1

Data lake

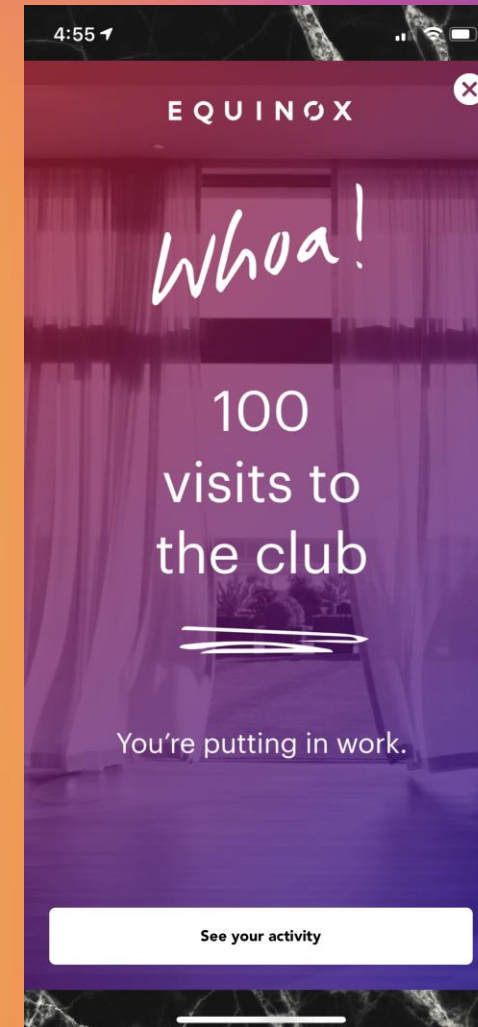
Data lake

- Lambda for event triggers and light processing
- AWS Glue Data Catalog
- Gracefully extending Amazon Redshift with Redshift Spectrum
- Athena for Amazon Simple Storage Service (Amazon S3)-only workloads



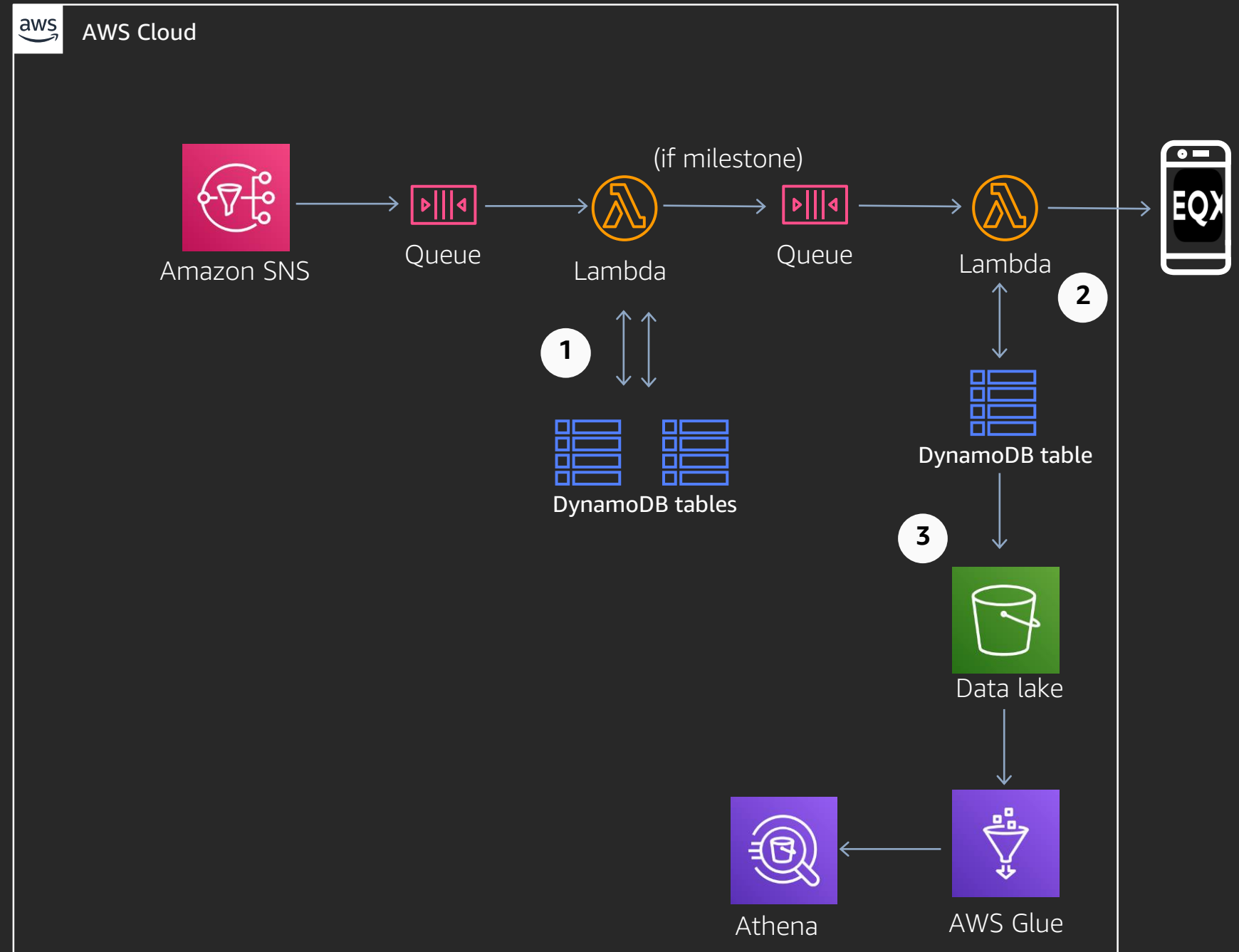
Architecture #2

Recognition program



Recognition architecture

1. Query member attributes and check-in history
2. Store milestone event in DynamoDB and send request to app
3. Copy DynamoDB to Amazon S3 for analytics

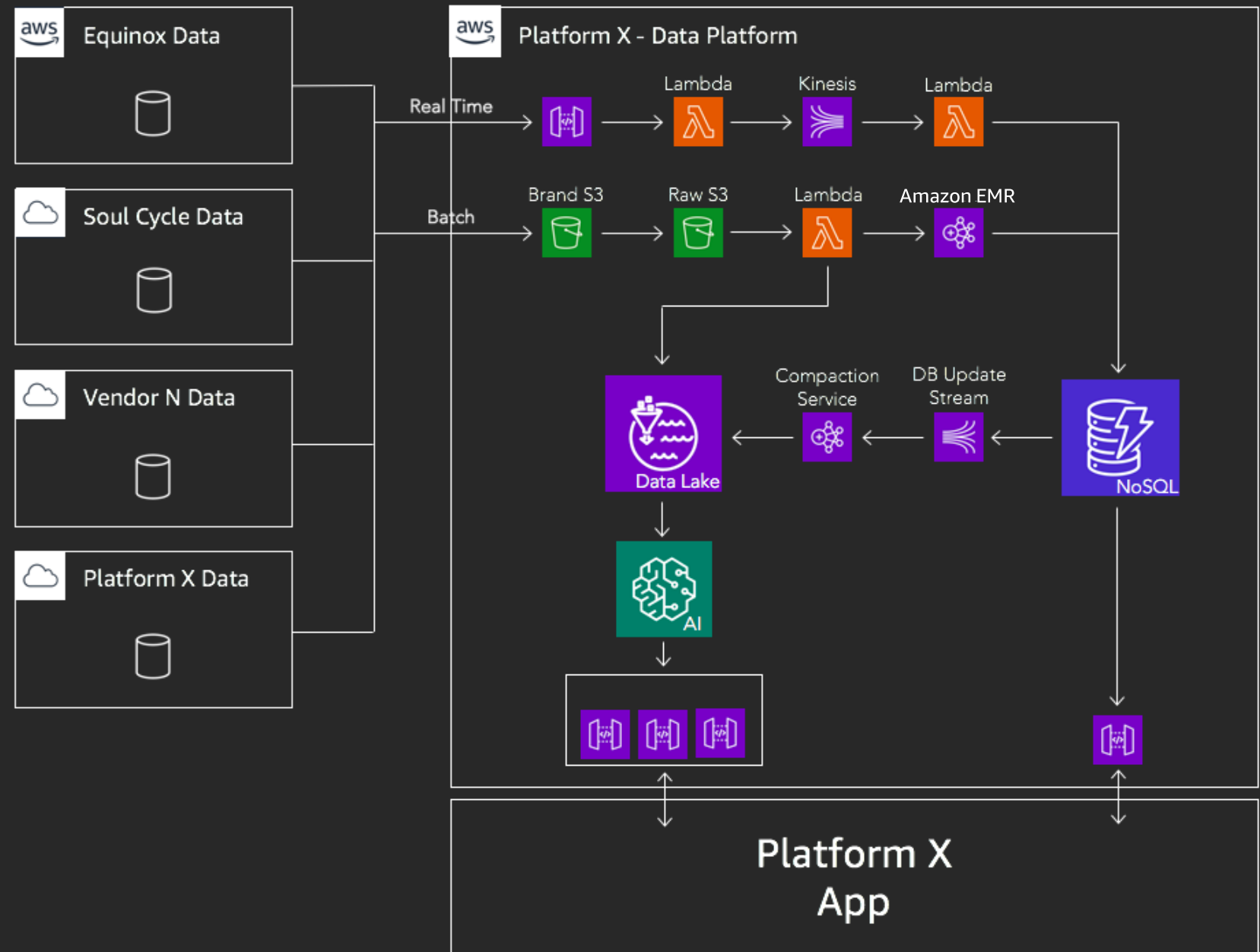


Architecture #3

Equinox Media

Equinox Media architecture

- ETL: Event-driven file and event processing leveraging Lambda and Amazon Kinesis
- Storage: DynamoDB analytics store and S3 data lake
- Query: Athena and AWS Glue Data Catalog serverless query engines
- ML/AI: AWS Fargate deployed ML models

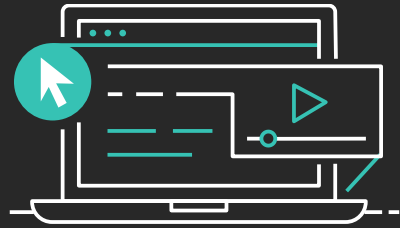


Takeaways

- S3 and Glue Data Catalog extending traditional DW
- Infrastructure as code
- Event-driven architecture
- Logging for distributed systems
- Anomalies at scale: circuit breakers, exactly once processing

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