Have Your Front End & Monitor it Too with Amazon Elasticsearch Service

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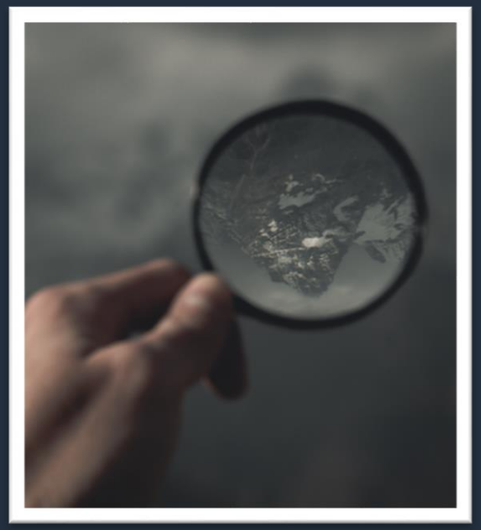
September 2020

Follow along…

The lab guide is available at:

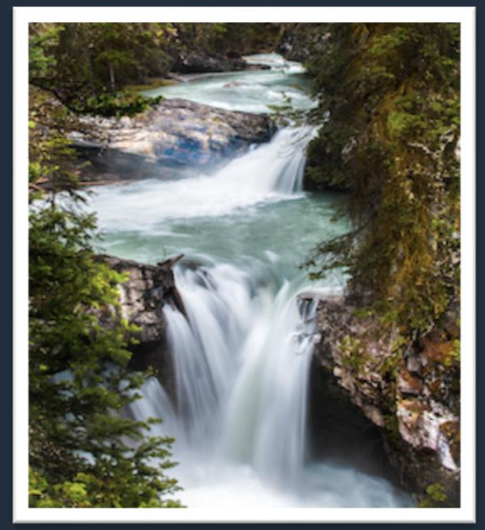
https://hyfeamit.aesworkshops.com/

What's it good for?



Search workloads

Load your data in and search it. Rich queries, adjustable ranking, language features, search in a box.



Analytics workloads

Near real-time availability of log data (seconds)

Visualizations, dashboards, and alerting for monitoring

Amazon Elasticsearch Service is a **fully managed service** that makes it easy to deploy, manage, and scale Elasticsearch and Kibana

aws

Simple to use - it's a database

1

Send data as JSON via REST APIs

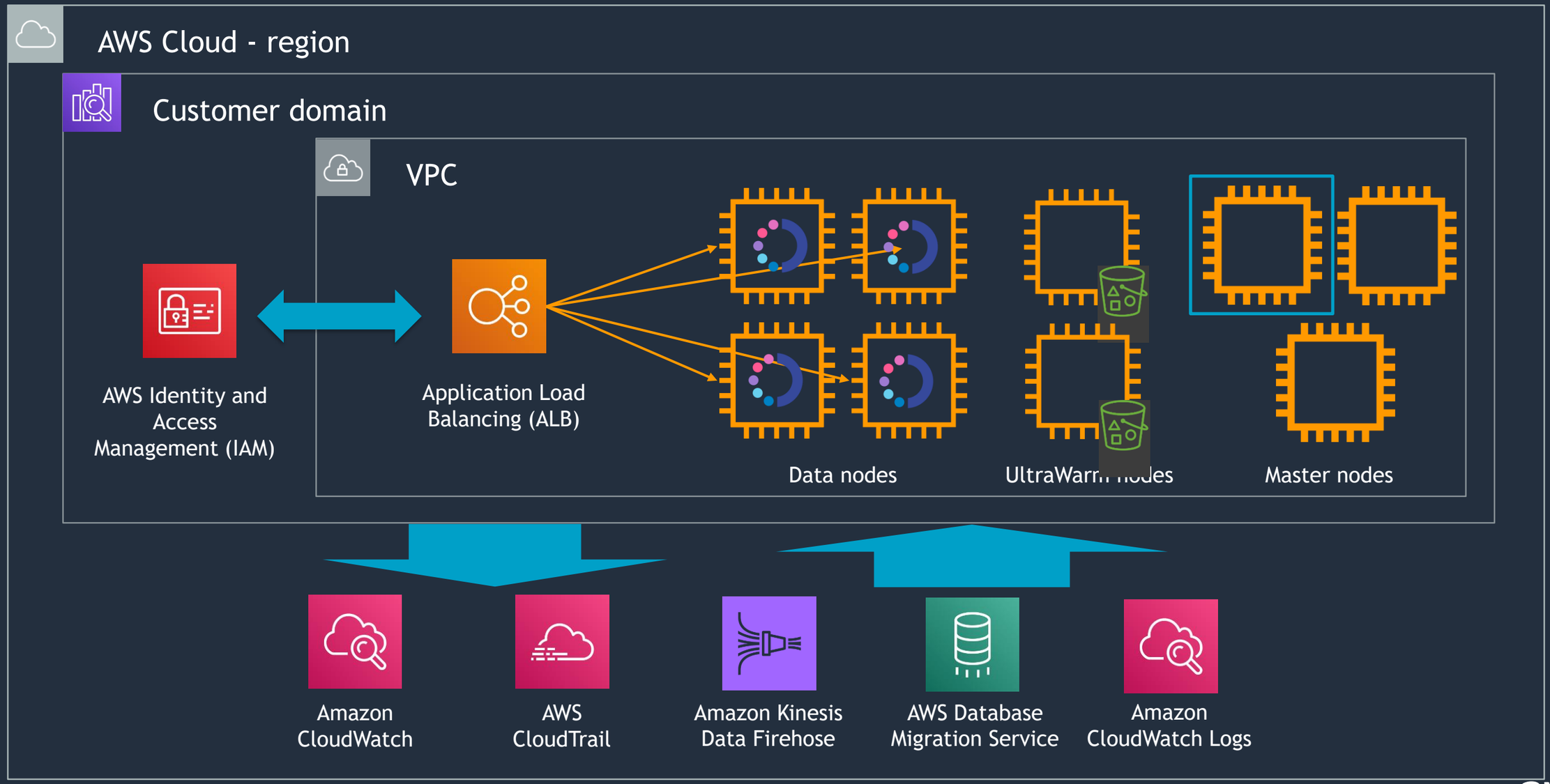
2

Data is indexed—all fields searchable, including nested JSON

3

REST APIs, for fielded matching, Boolean expressions, sorting and analysis

Amazon ES architecture

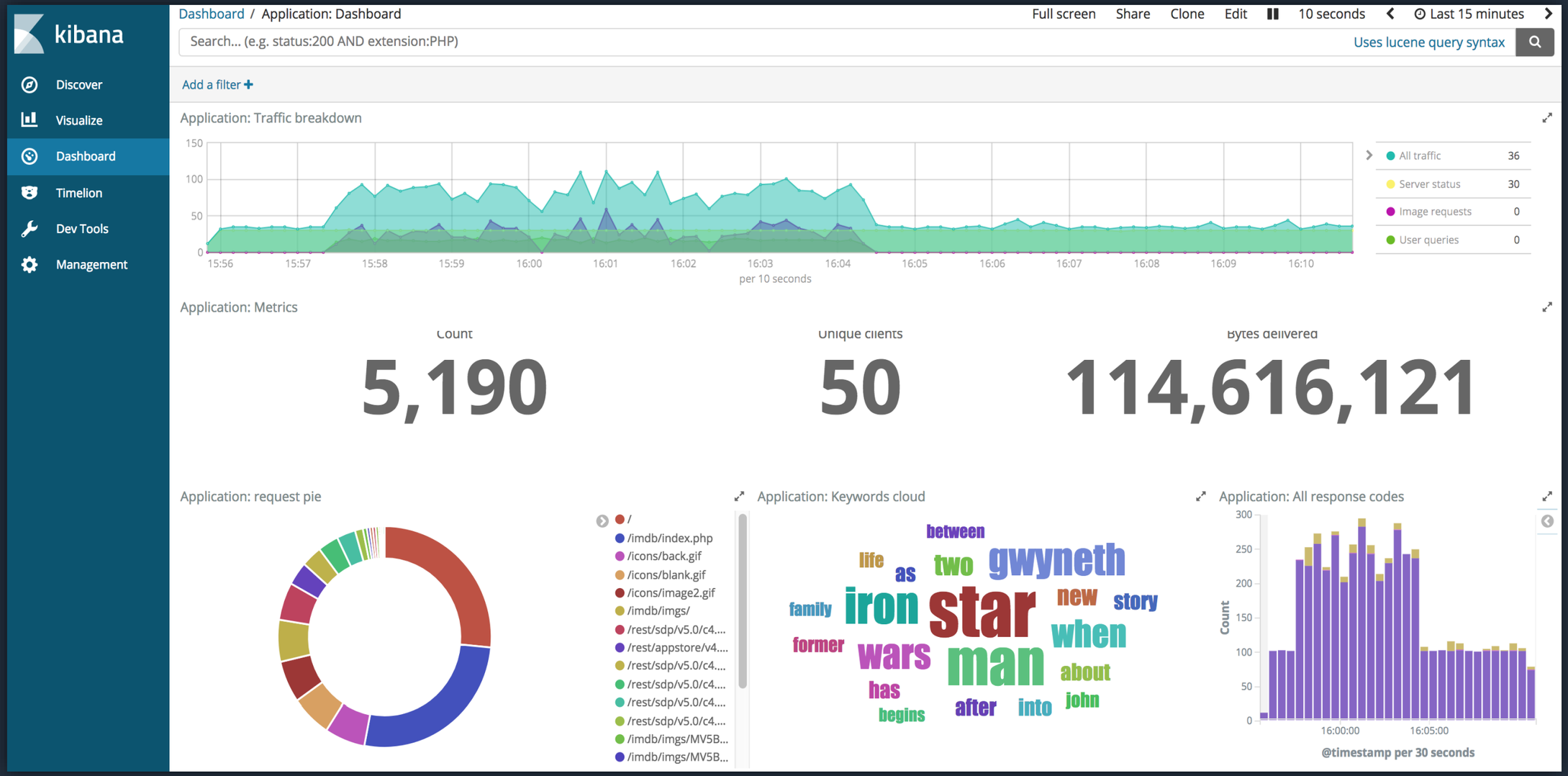


Amazon Elasticsearch Service open source roots

- Deployment framework that provides a managed open source offering consisting of:
  - Elasticsearch
  - Kibana
- Integrates with popular ingest frameworks like:
  - Fluentd
  - Beats
  - Logstash

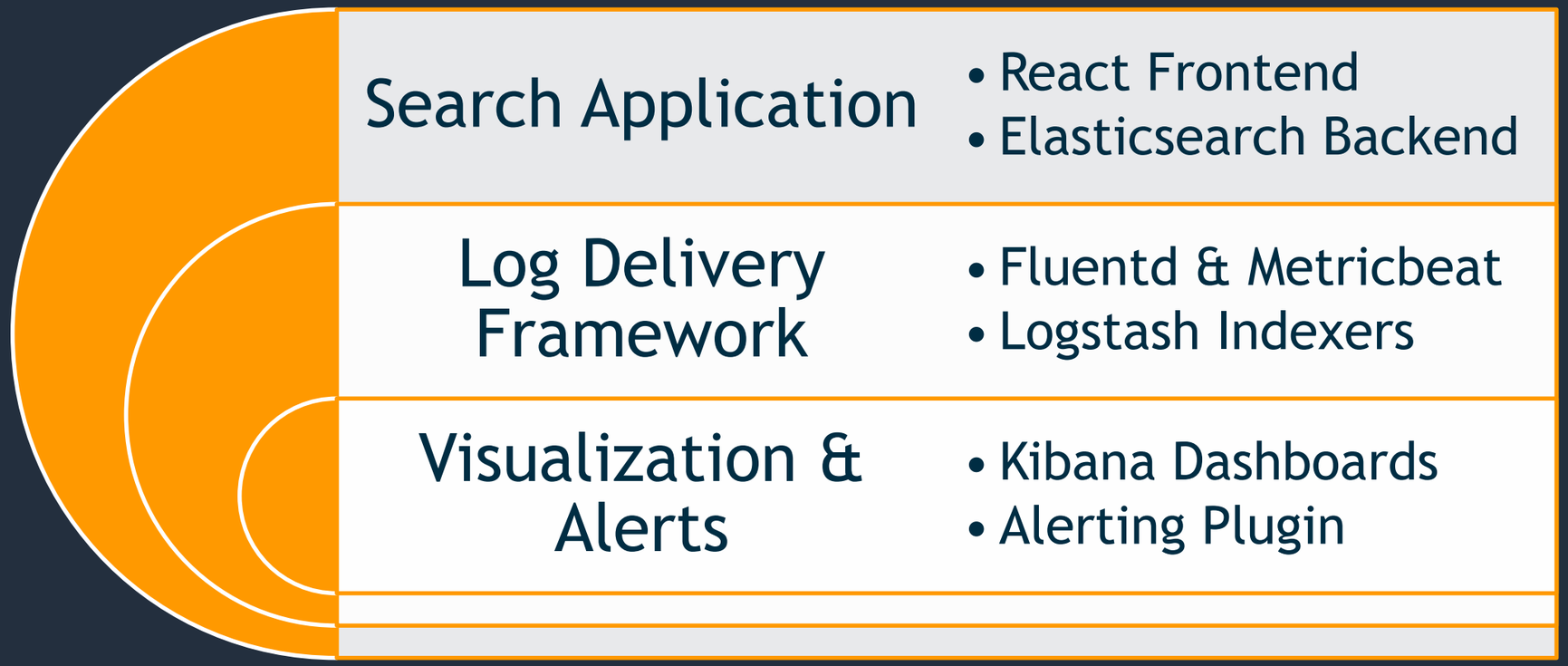
aws

Visualize and monitor your data with Kibana



What You Are Building

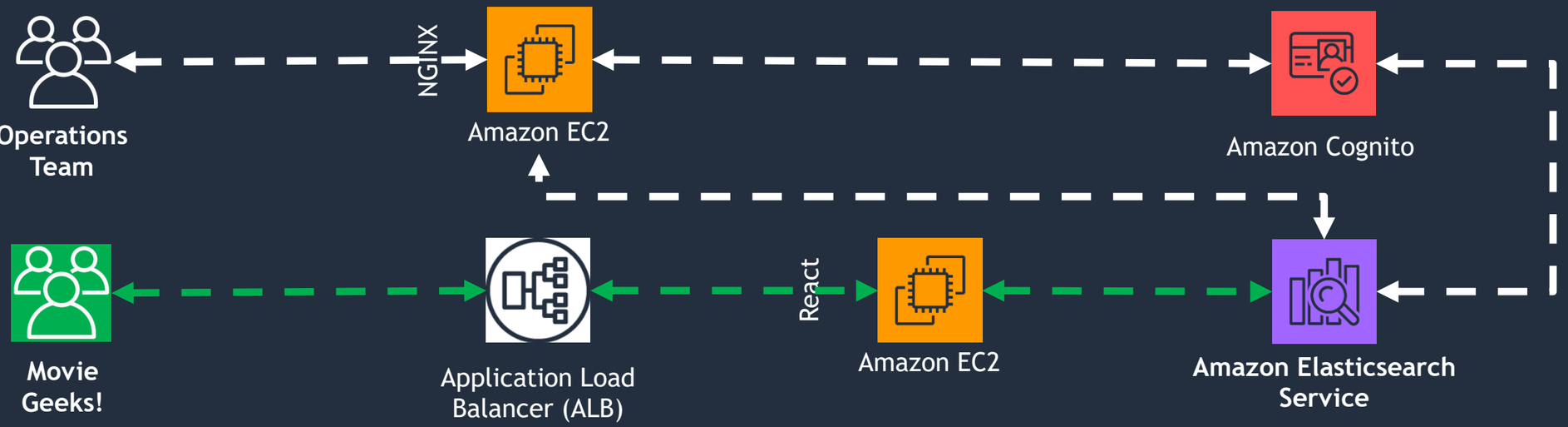
High Level Functional Components



Lab 1 - Enable a search application

Prebuilt application backed by Amazon Elasticsearch Service

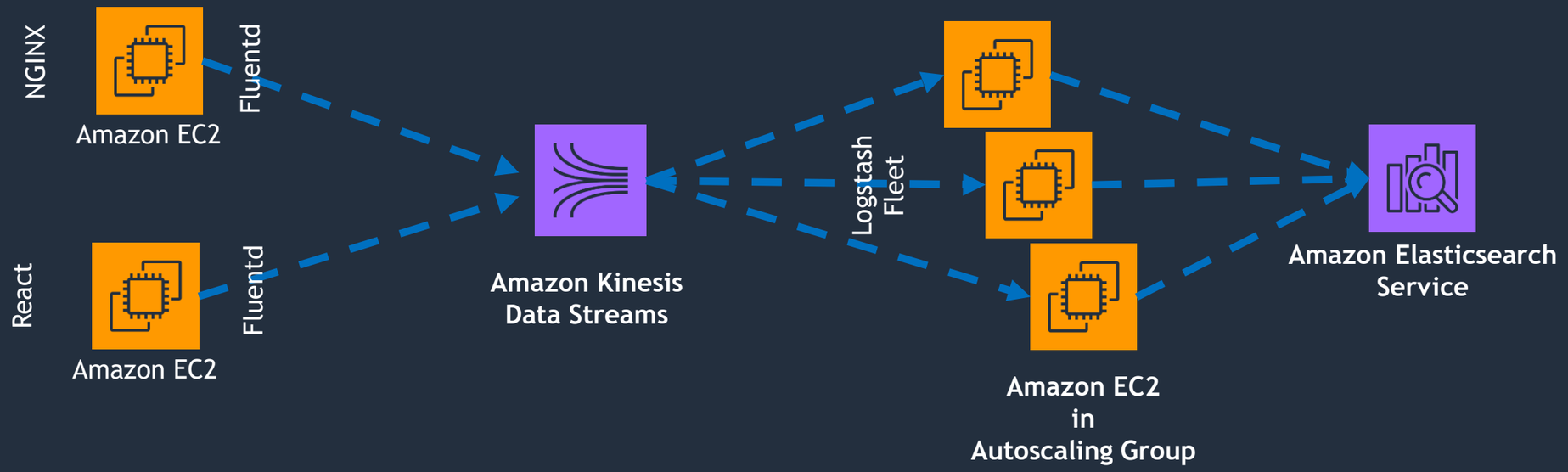
- Wire in access Kibana for monitoring outside of a VPC
- Provision application data using common tools and scripting
- Review search, bulk and indexing APIs



Lab 2 - Create a log delivery pipeline

Using foundational elements created by AWS CloudFormation

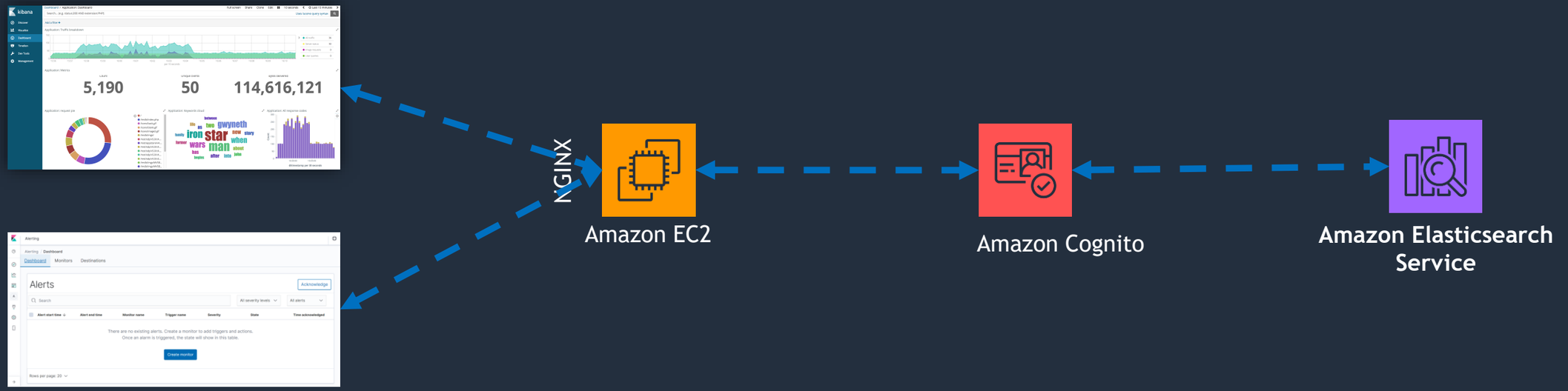
- Connect producers with an Amazon Kinesis Data Stream for a log buffer
- Configure MetricBeats and Fluentd on the NGINX proxy and the React application servers
- Build a Logstash indexer fleet to write Kinesis data to Amazon ES



Lab 3 - Create visualizations and alerts

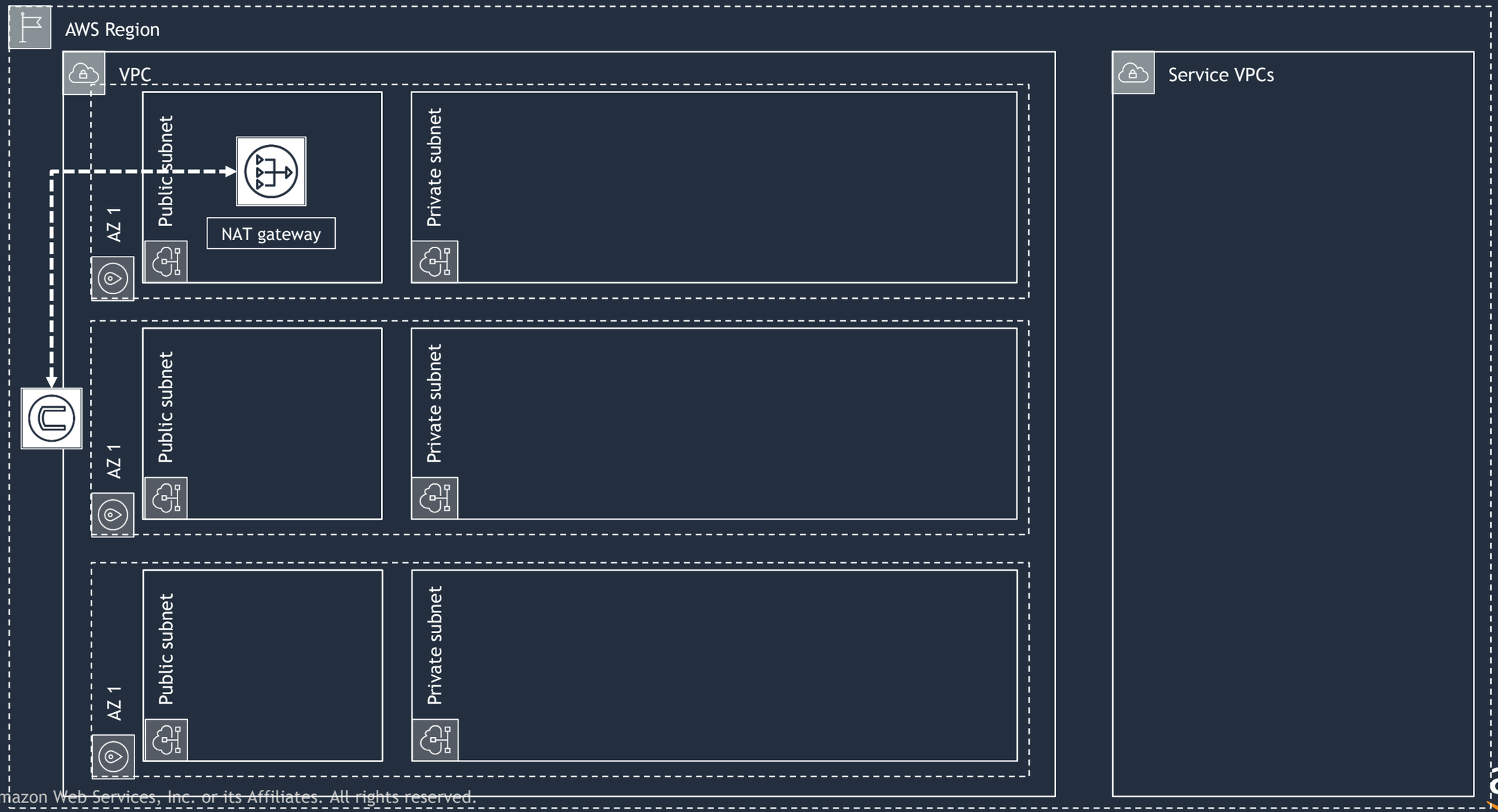
Leverage Kibana dashboards and alerts to proactively and reactively monitor your front end

- Leverage prebuilt Metricbeat dashboards to monitor system details
- Build custom visualizations and dashboards to monitor the application
- Use Alerting plugin to notify you of problems in the solution

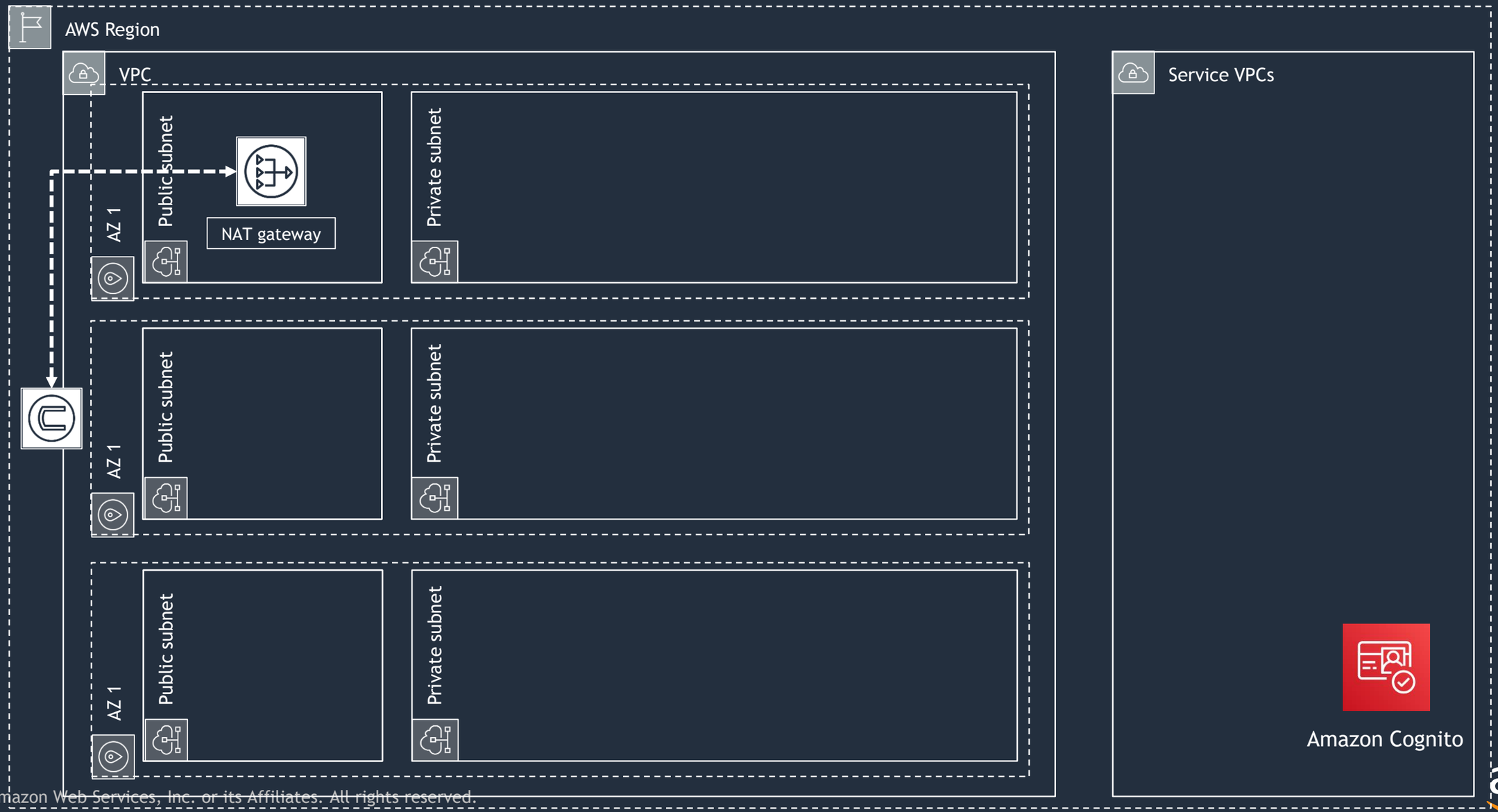


Basic Setup Deep Dive

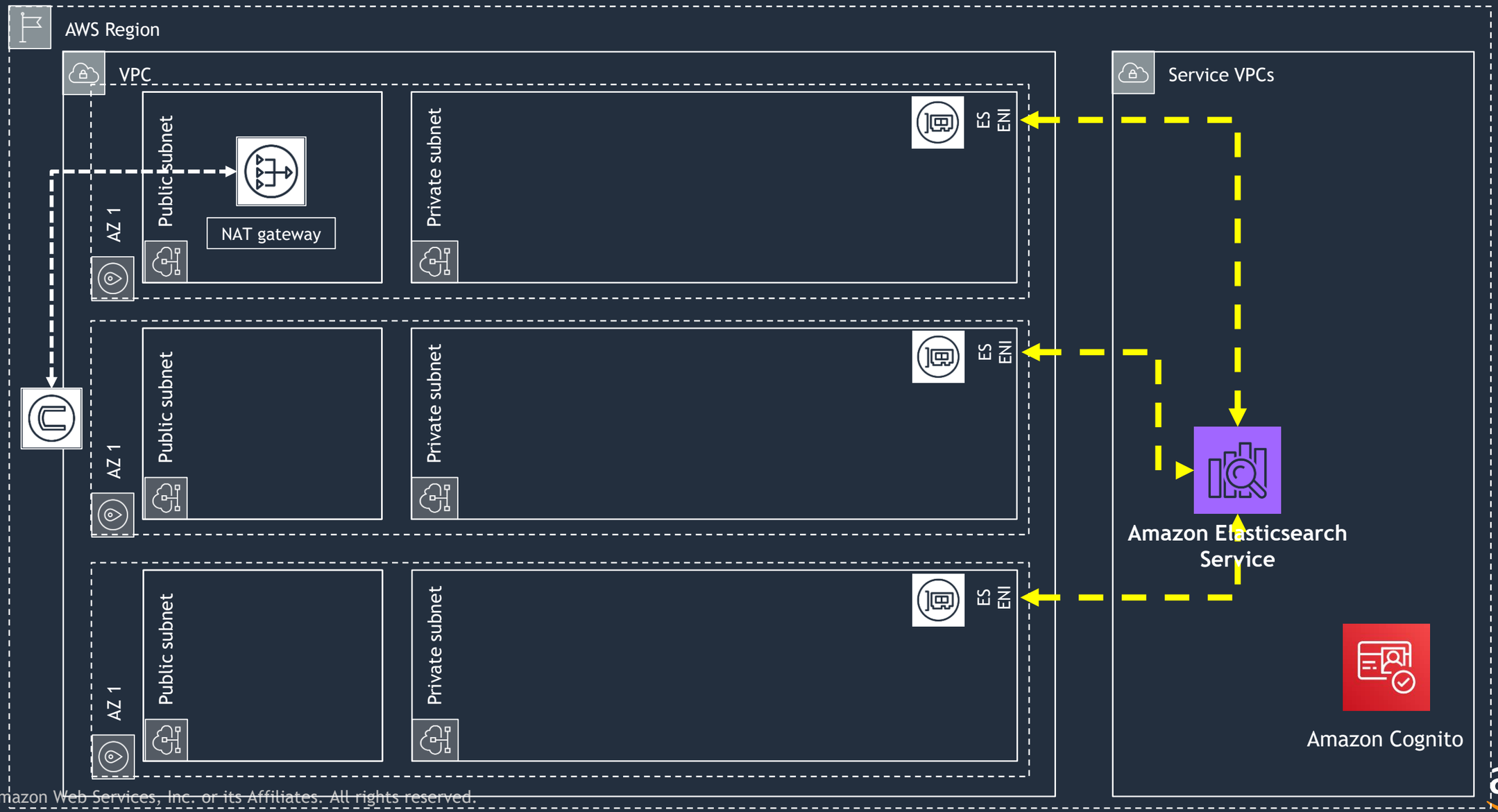
Network Layer Build



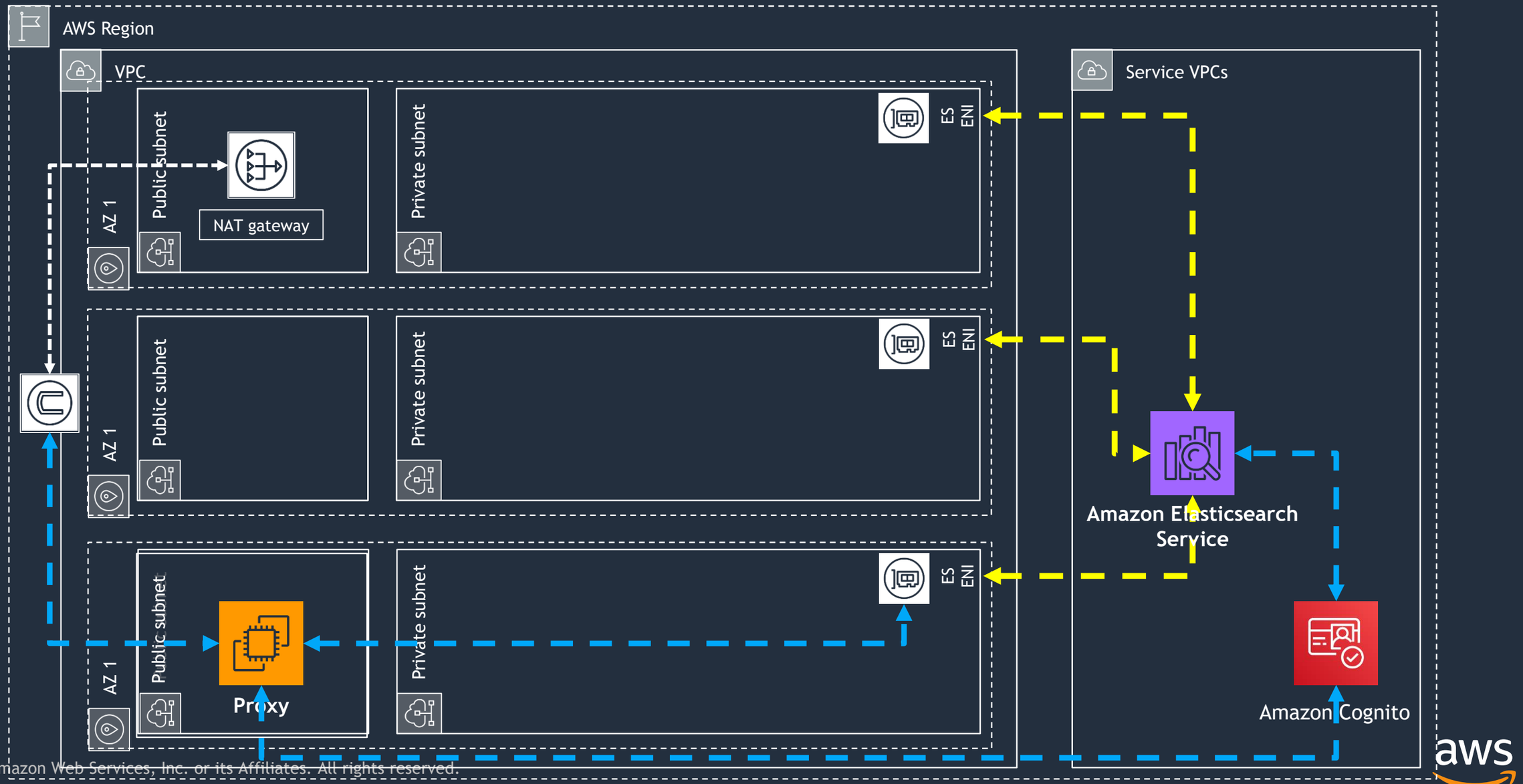
Authentication Layer Build



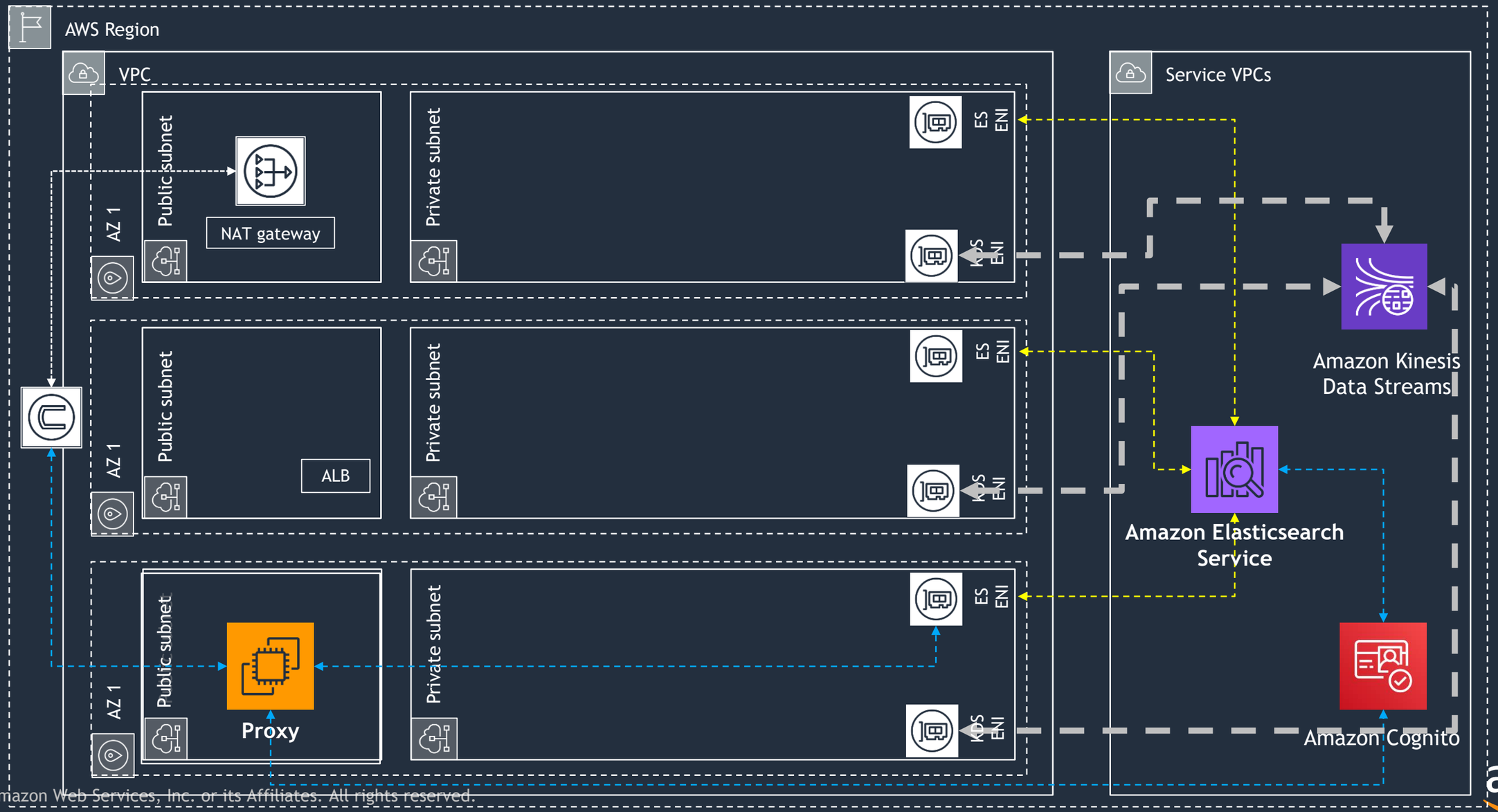
Elasticsearch Build



Proxy Build

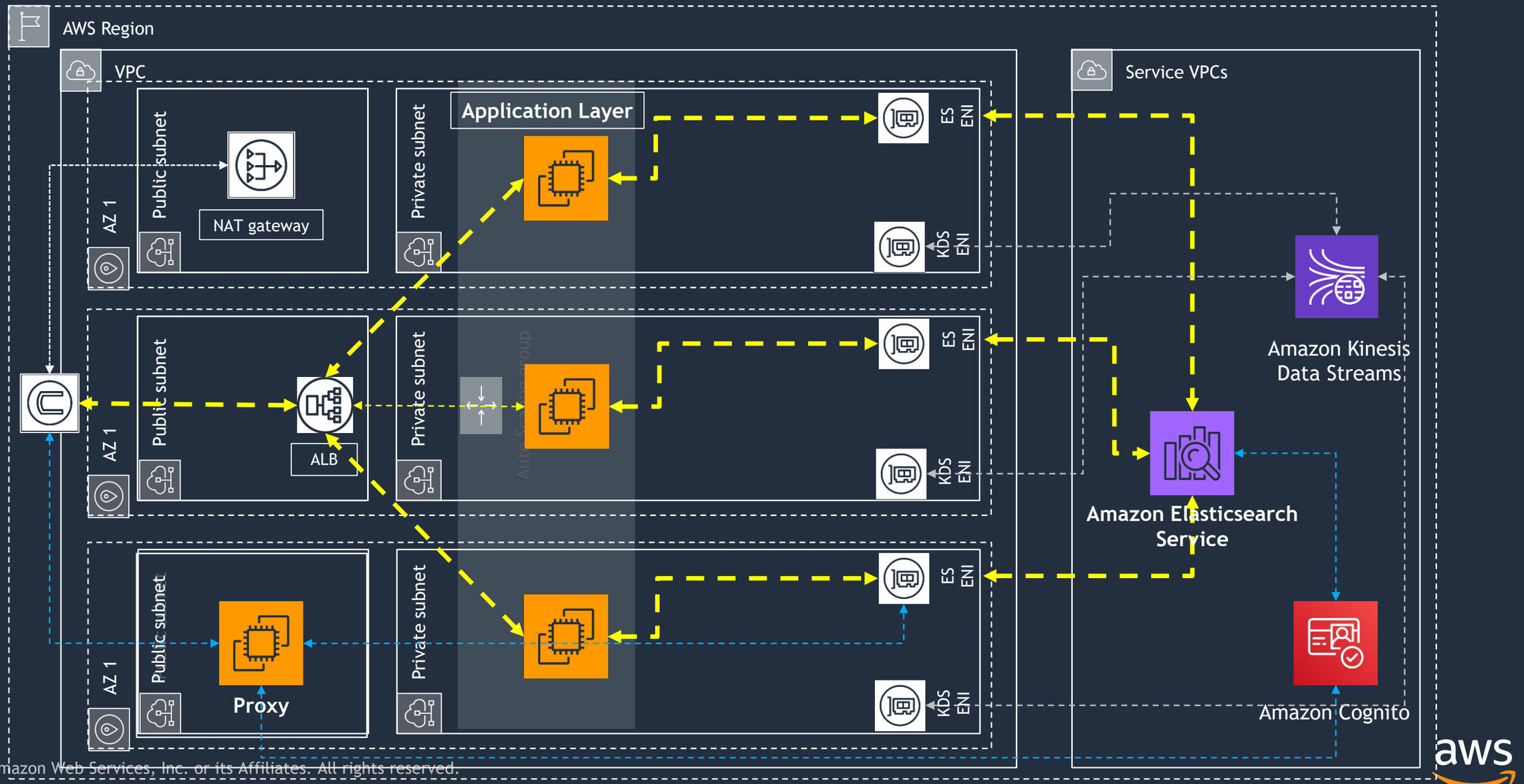


Streaming Buffer Build



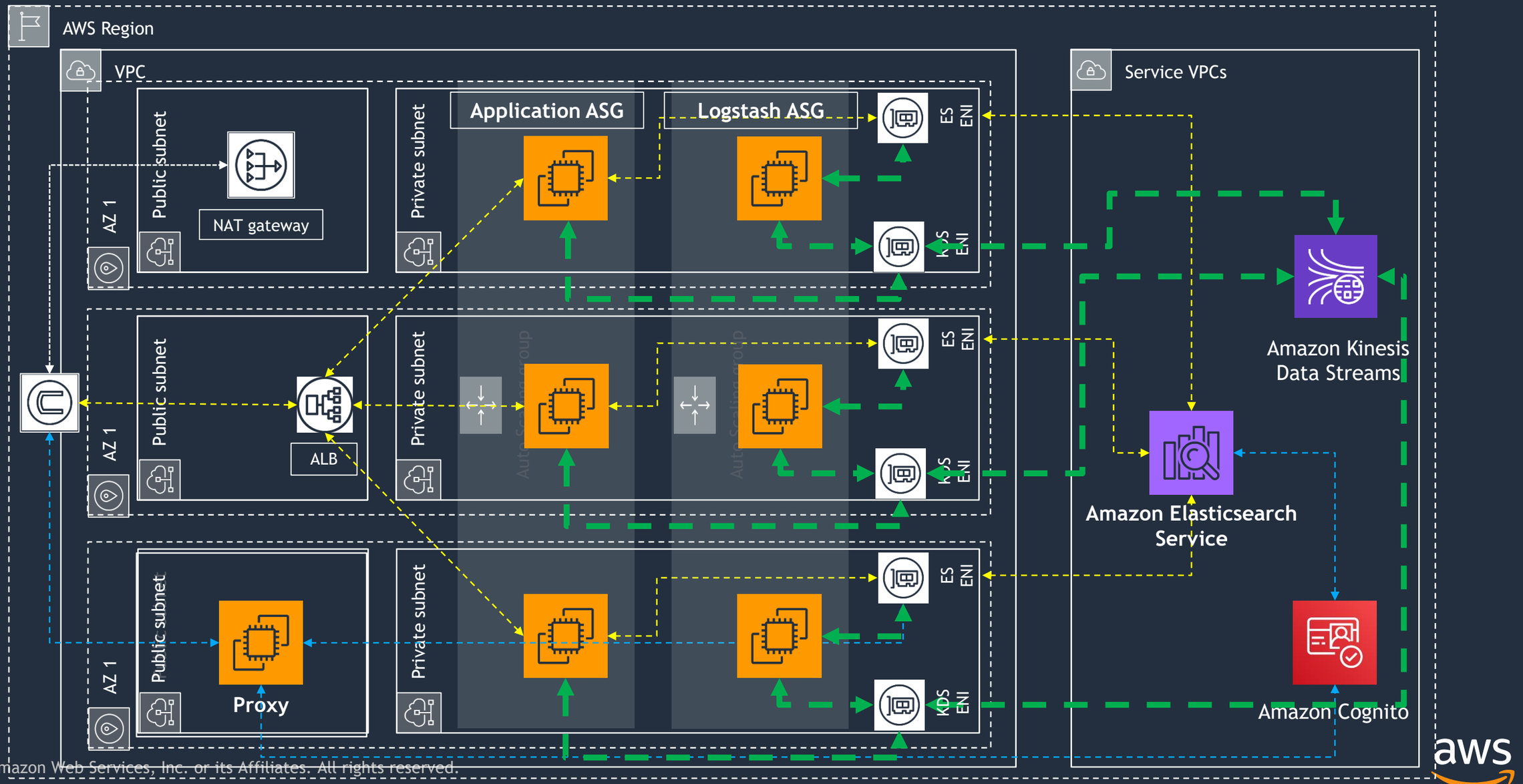
Lab 1: Application

Application Build

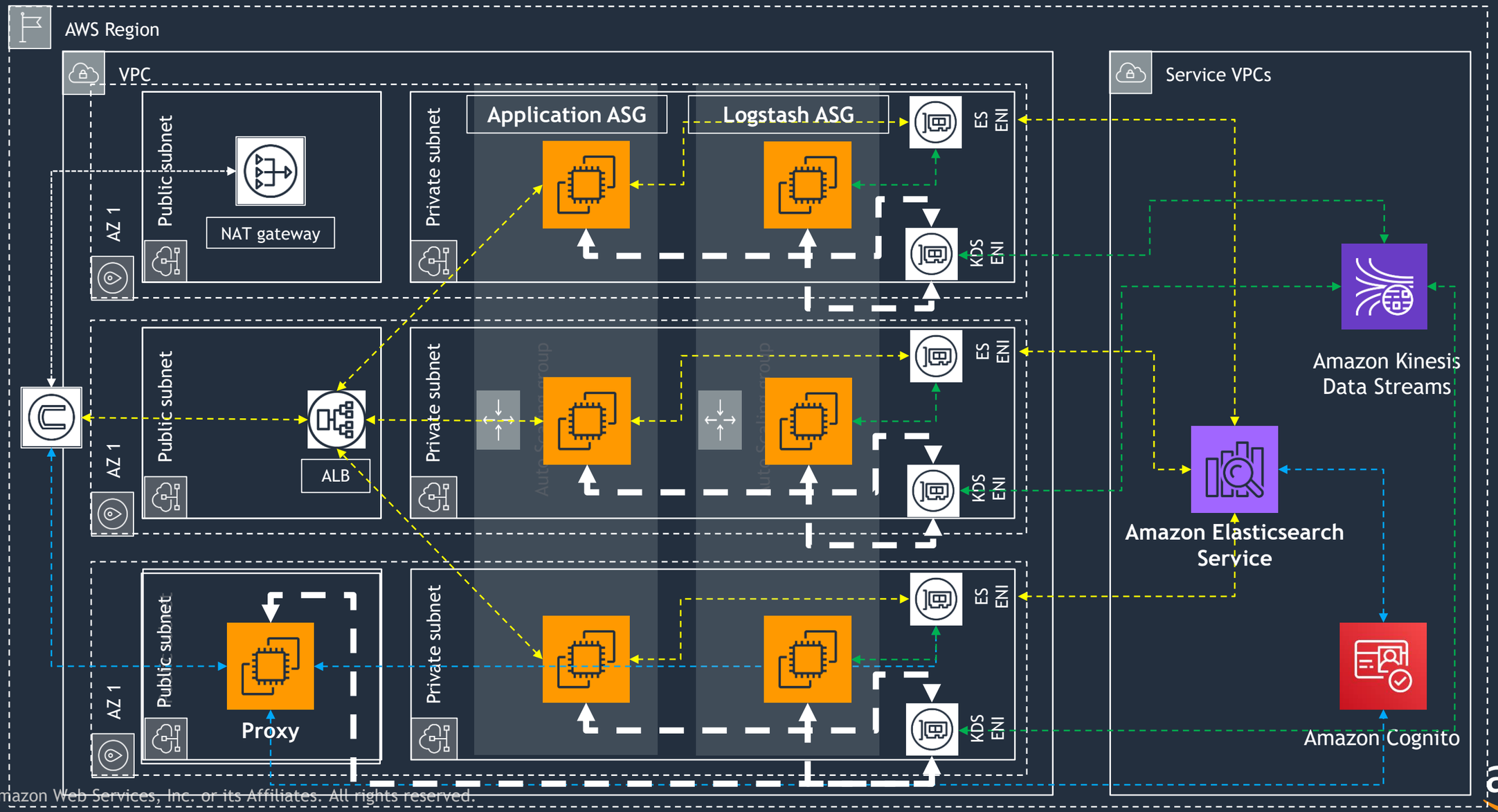


Lab 2: Logging

Logstash - Fleuntd Build

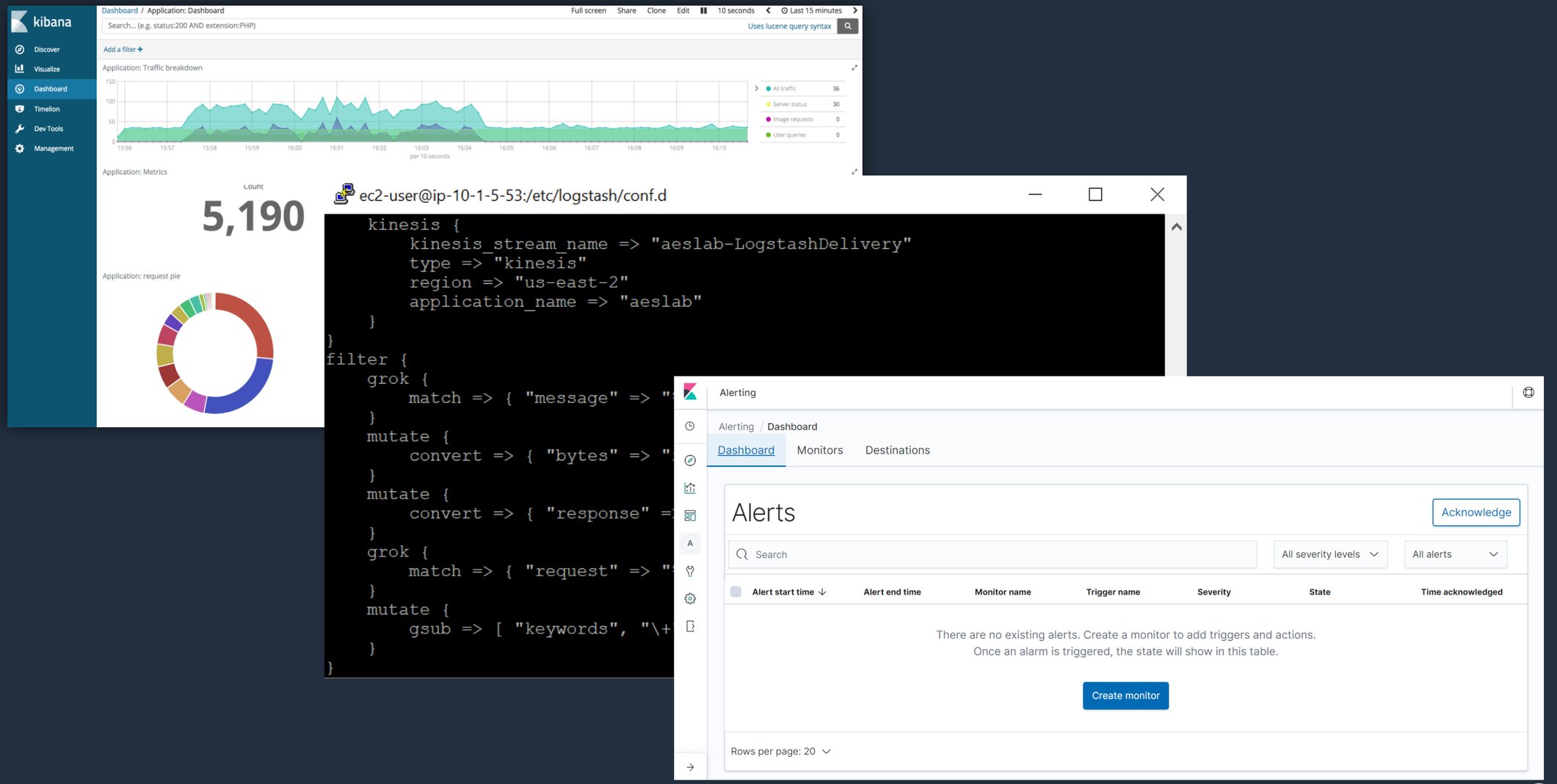


Final Manual Wiring



Lab 3: Kibana

Configure pipeline, build visualizations and alerts



Let's Get Started!

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Lab 1: Deploy the Web Application

Data is structured: title, description, ratings, etc.

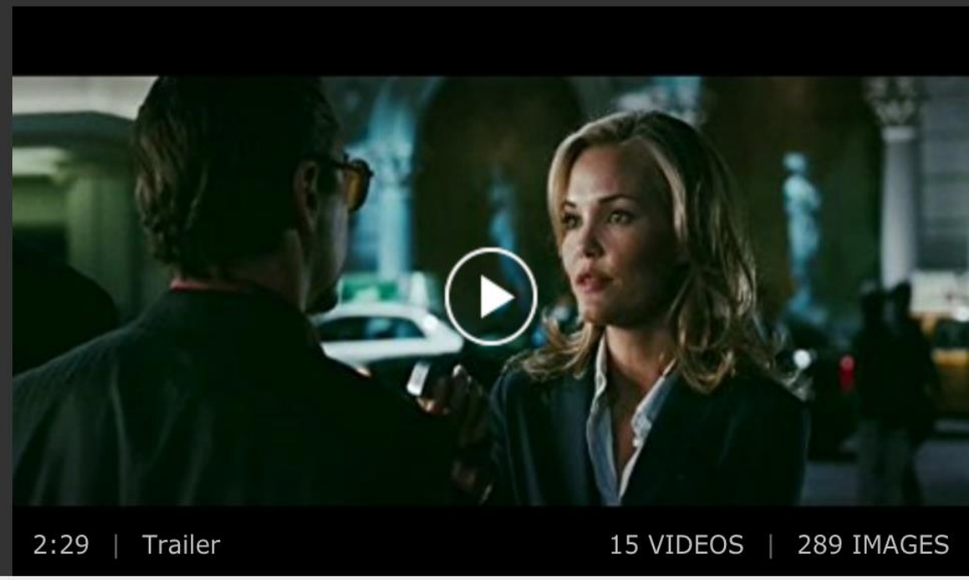
FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE

SHARE

Iron Man (2008)

7.9/10
797,560
Rate This

PG-13 | 2h 6min | Action, Adventure, Sci-Fi | 2 May 2008 (USA)



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From $12.99 (SD) on Prime Video

ON TV | ON DISC | ALL

After being held captive in an Afghan cave, billionaire engineer Tony Stark creates a unique weaponized suit of armor to fight evil.

Director: Jon Favreau

Writers: Mark Fergus (screenplay), Hawk Ostby (screenplay) | 6 more credits »

Stars: Robert Downey Jr., Gwyneth Paltrow, Terrence Howard |
See full cast & crew »

79 Metascore
From metacritic.com

Reviews
1,116 user | 502 critic

Popularity
239 (23)

Data is structured: title, description, ratings, etc.

Search documents are structured representations of entities

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE

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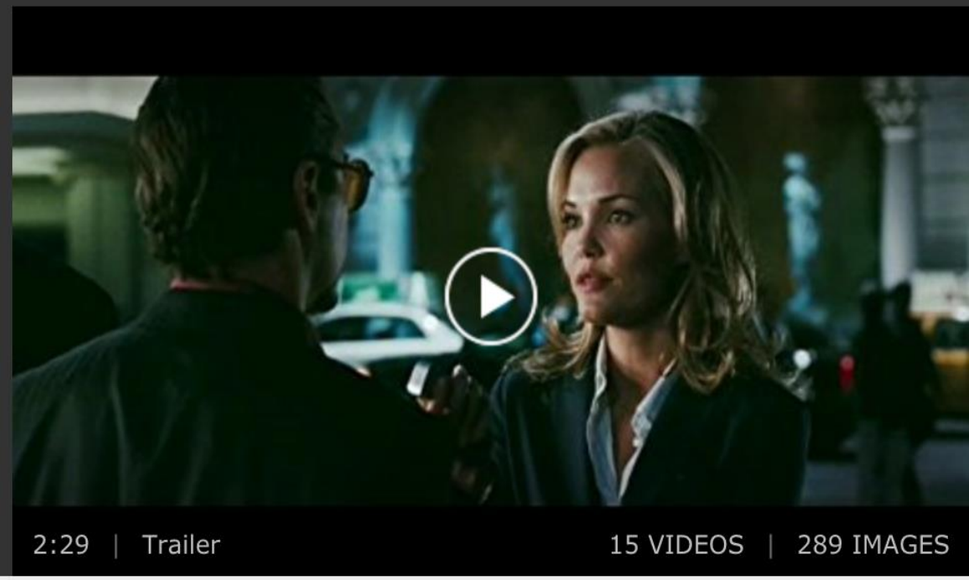

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Lab 2: Log ingestion

EC2 instance contents - Web Server

EC2 instance contents - Nginx Server

Kinesis Data Stream

Logstash Server

Amazon Elasticsearch Service

EC2 instance contents - Web Server

Transformed

Log data

EC2 instance contents - Nginx Server

Transformed

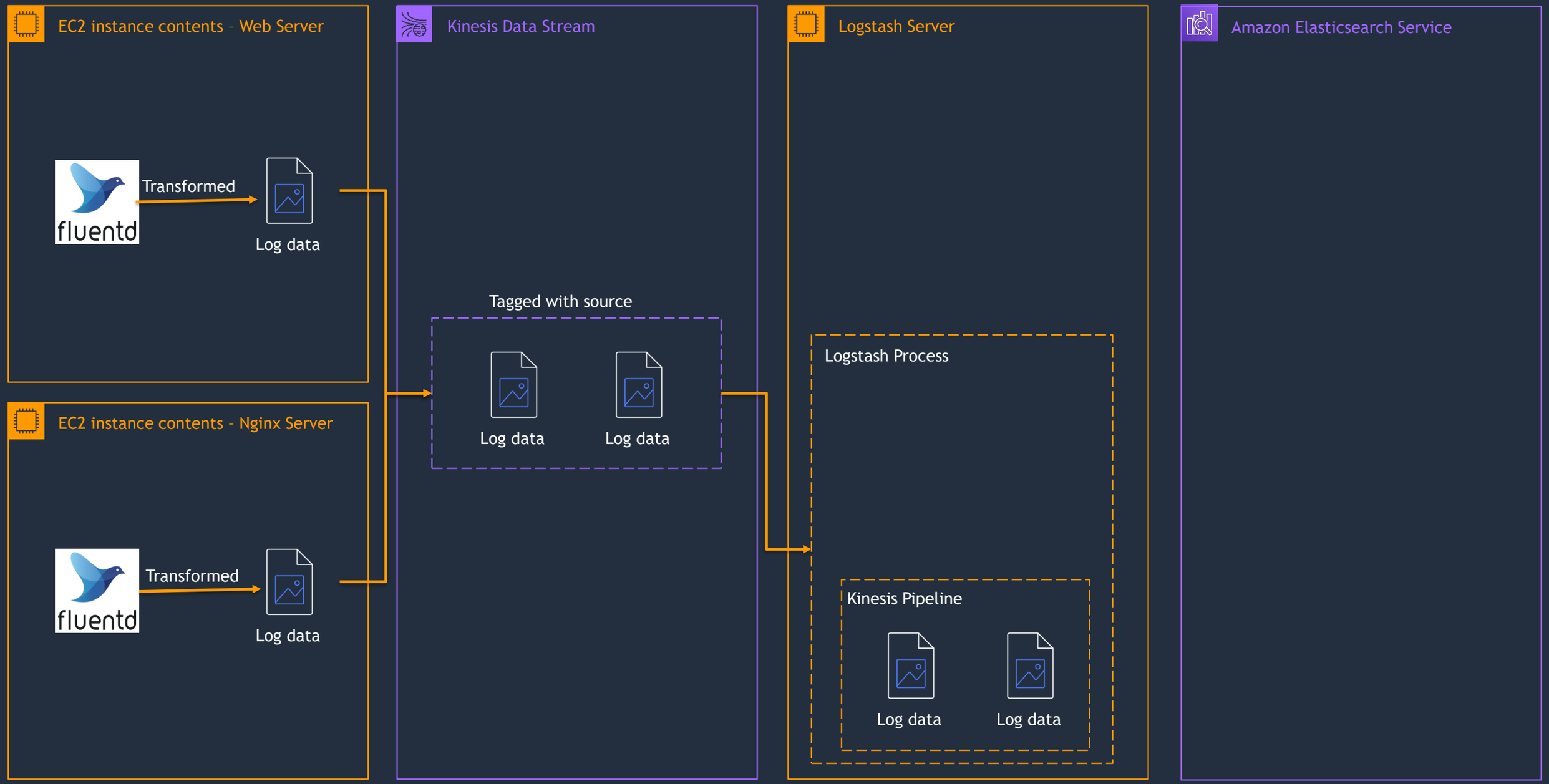
Log data

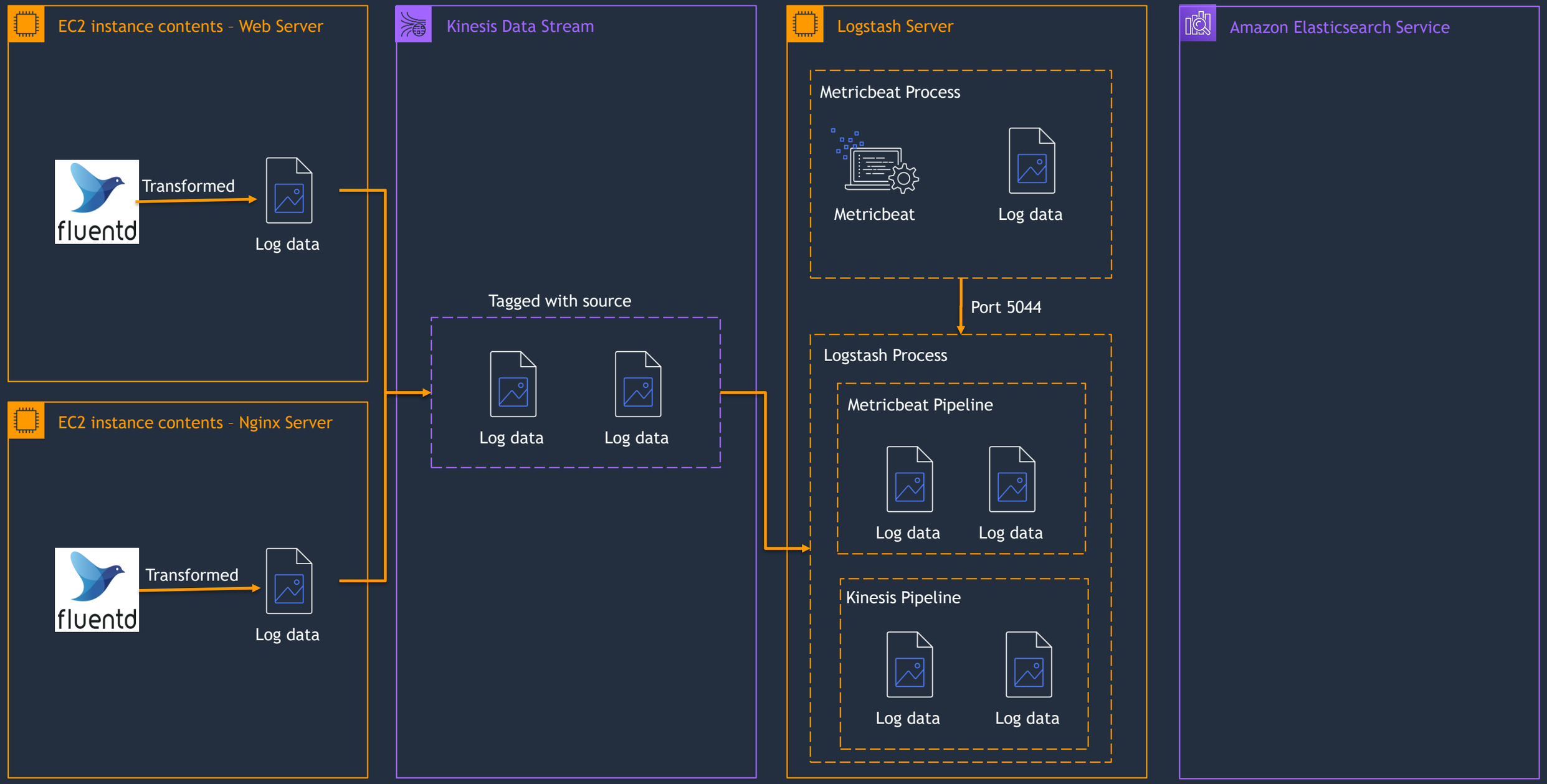
Kinesis Data Stream

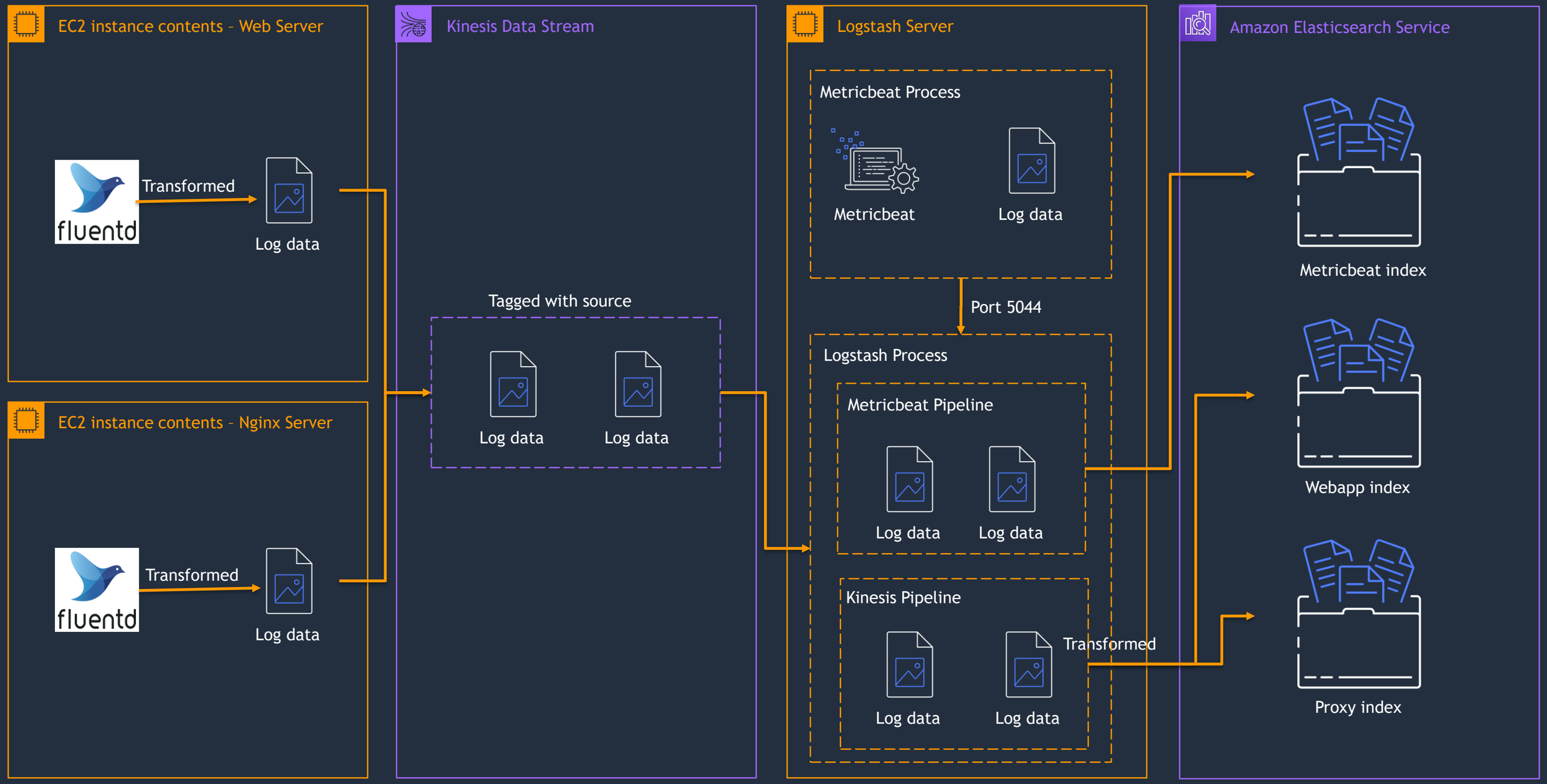
Logstash Server

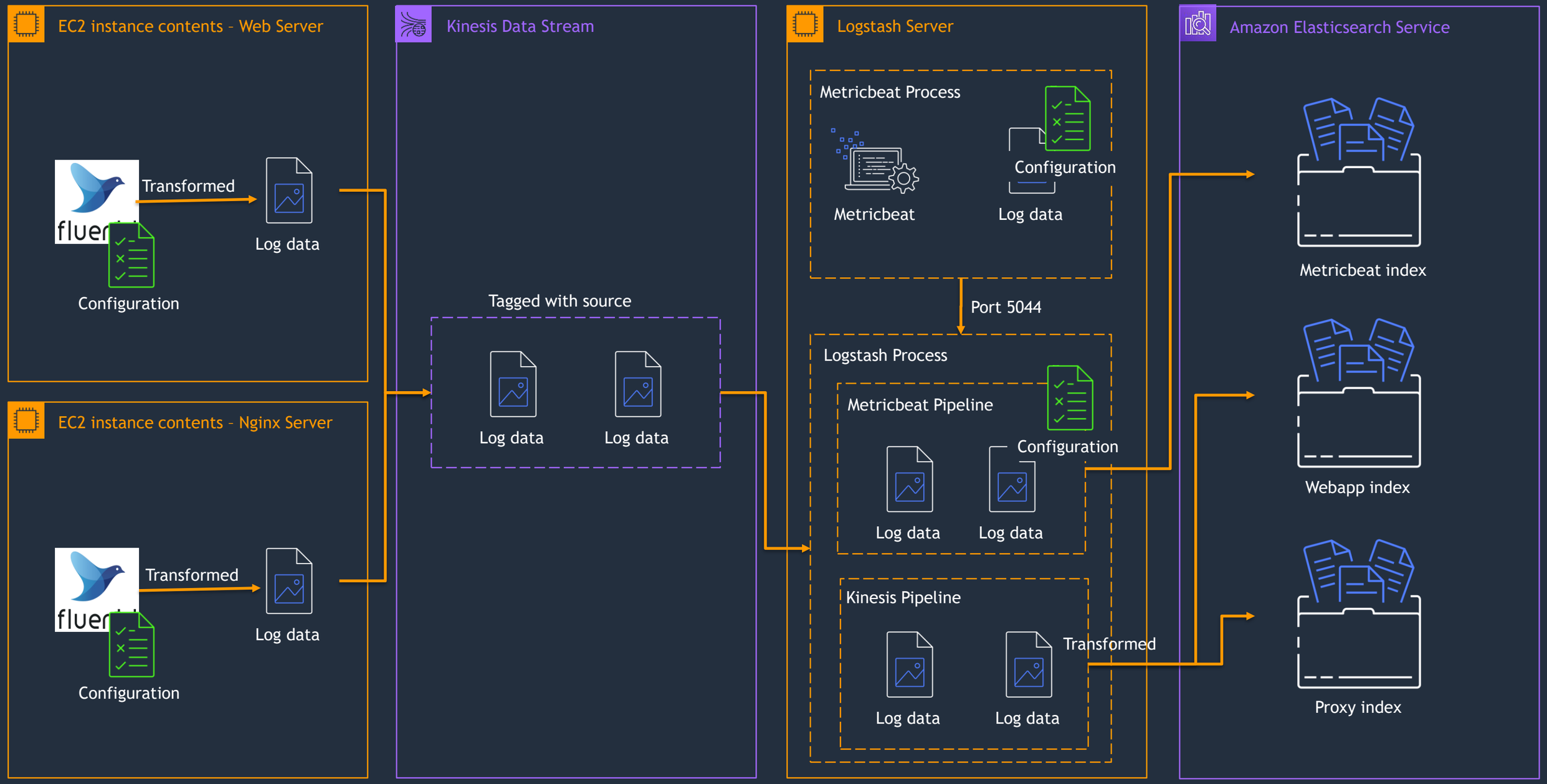
Amazon Elasticsearch Service

aws



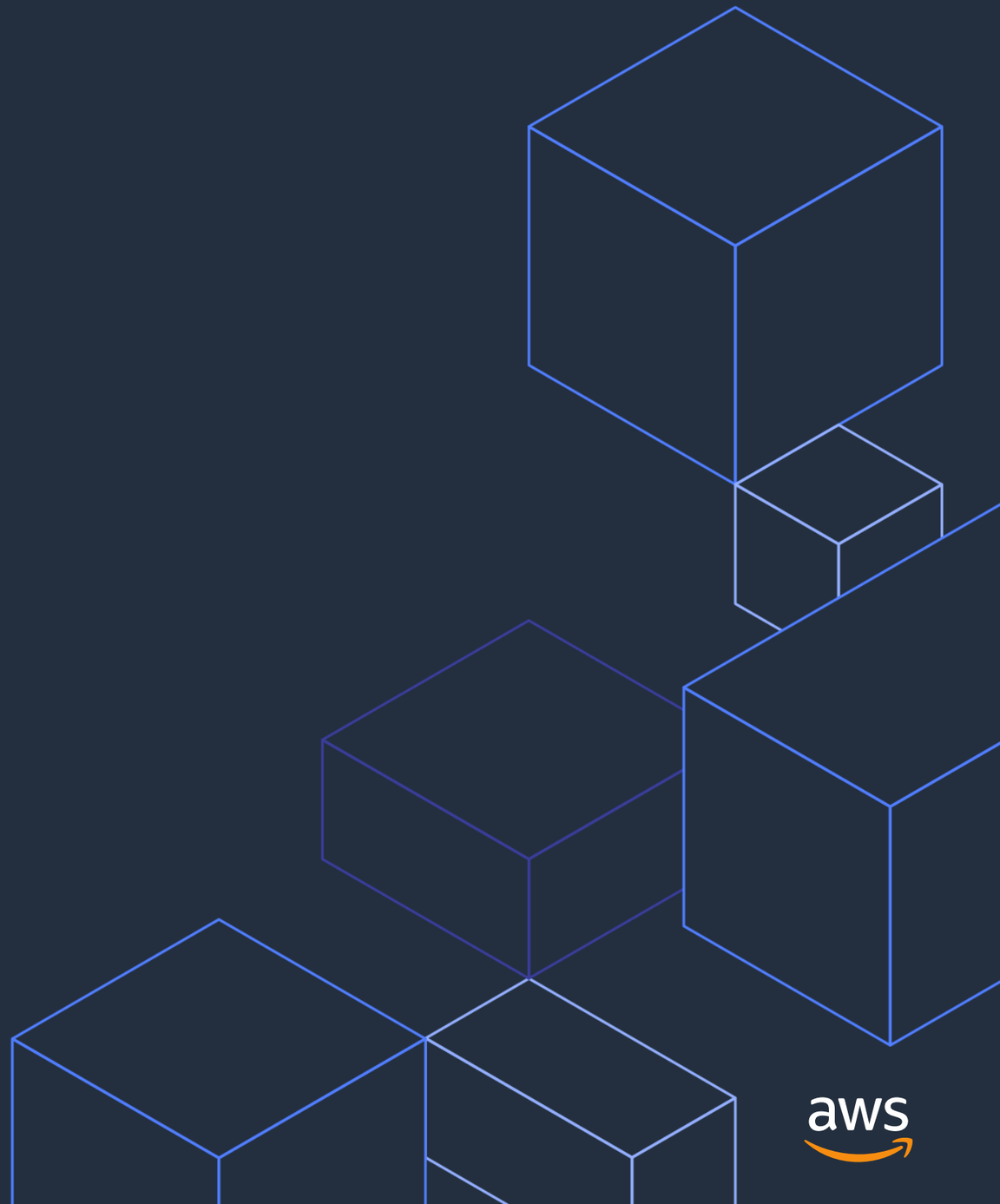


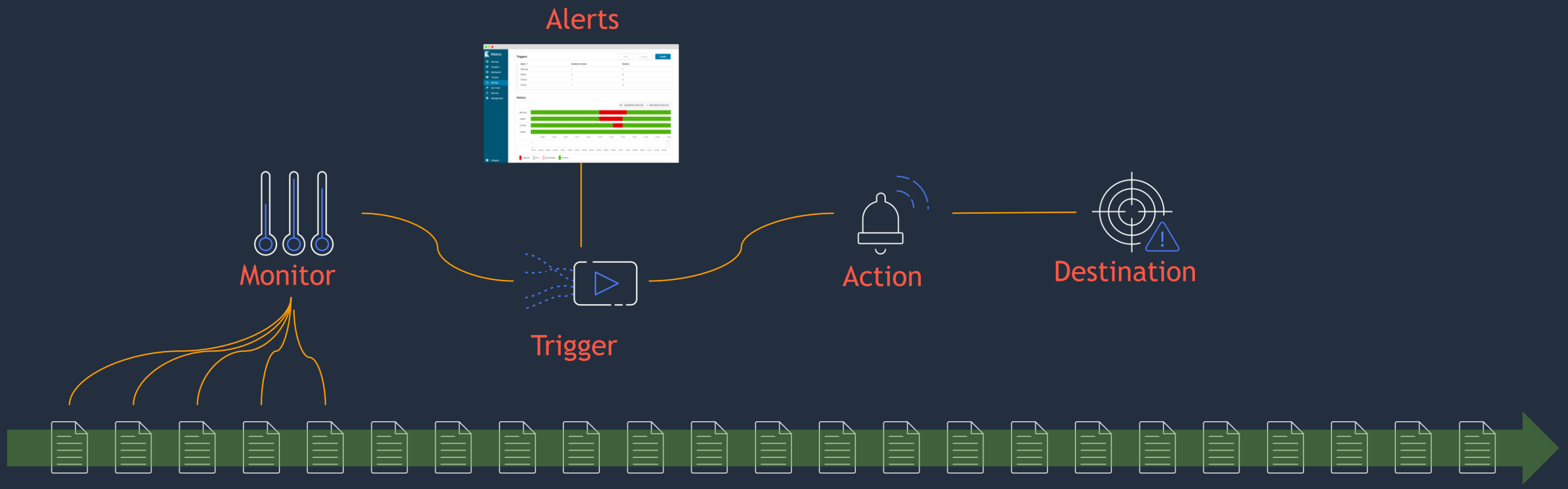




Lab 3: Build a Kibana Dashboard

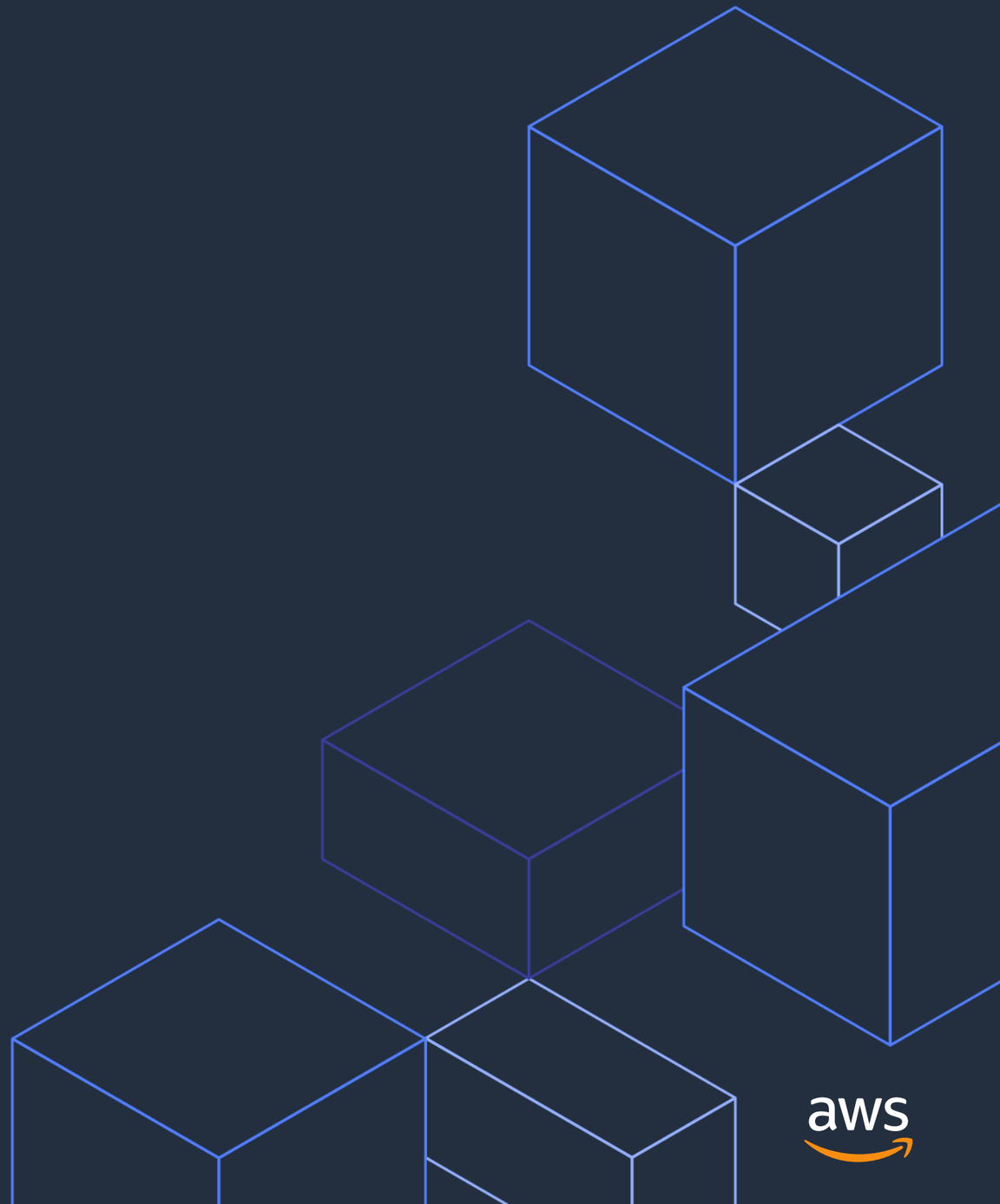
Lab 4: Alerting

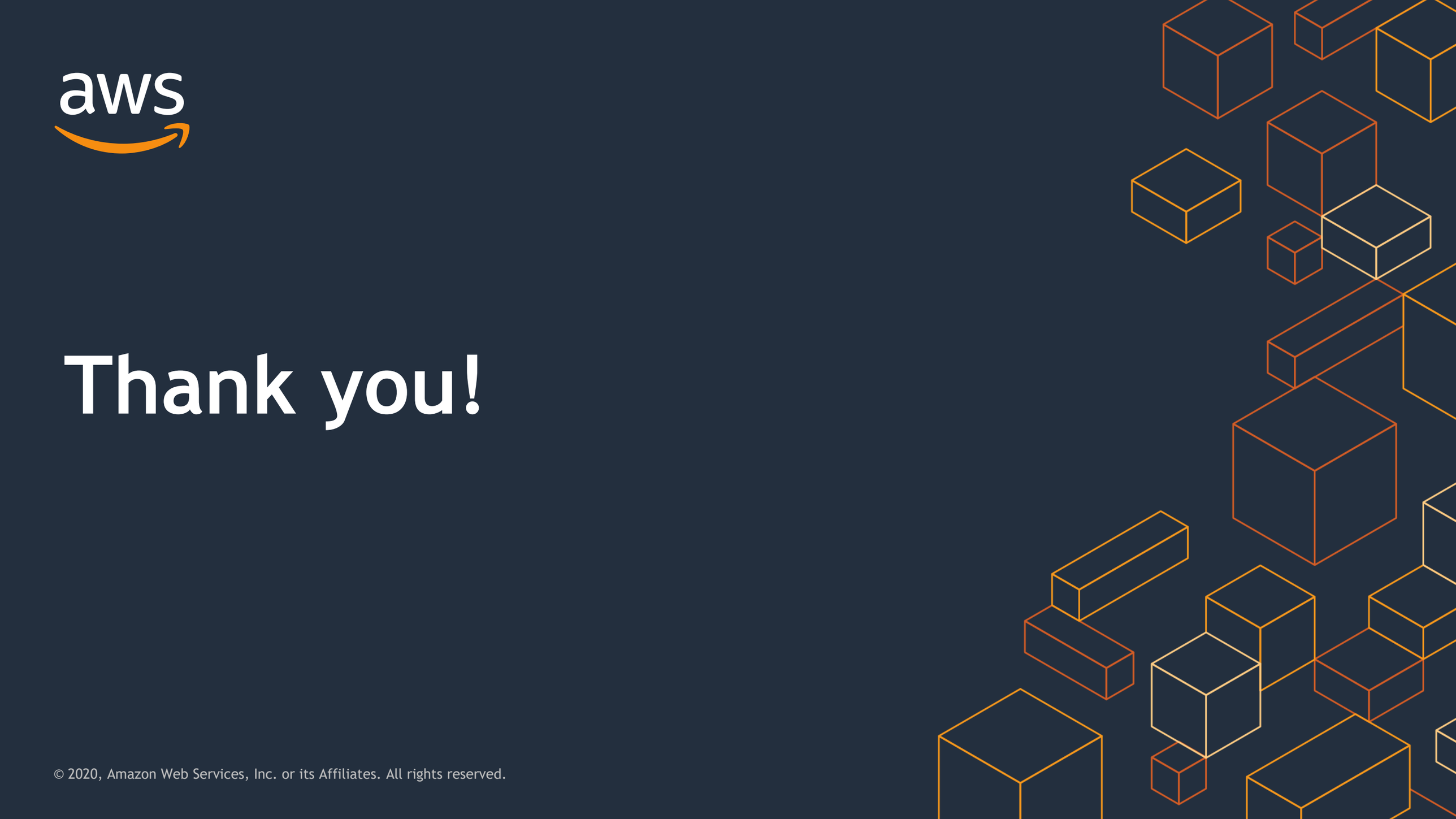




- Monitor – A job that runs on a defined schedule and queries Elasticsearch
- Trigger – Conditions that, if met, generate alerts and can perform some action
- Alert – A notification that a monitor's trigger condition has been met
- Action – Information you want the monitor to send out after being triggered
- Destination – A reusable location for an action, Amazon SNS, Amazon Chime, Slack, or a webhook URL

Wrap up





Thank you!