AWS re:Invent

NET312

How the BBC uses Lambda@Edge to customize device pages

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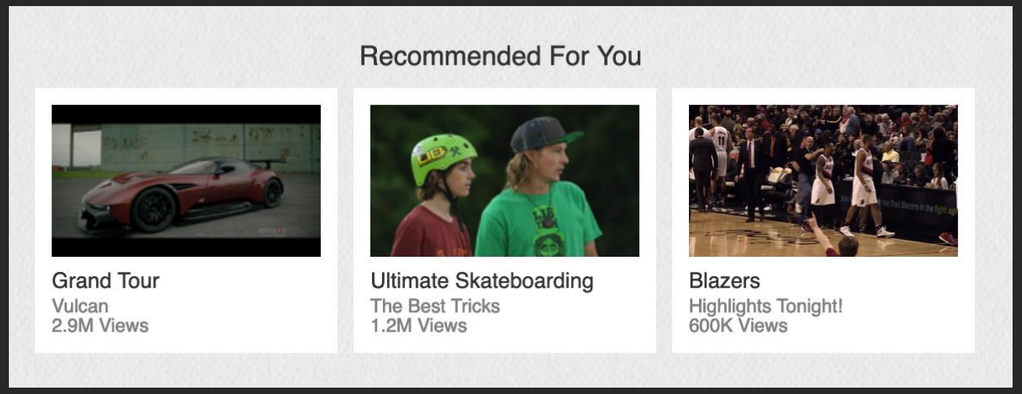
What is Lambda@Edge?

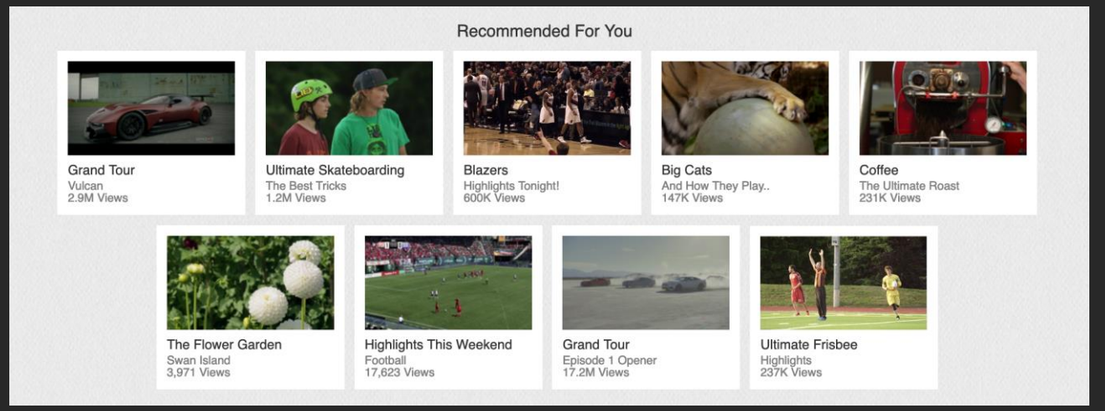
- Part of Amazon CloudFront
  - Allows you to run code closer to users
  - Reduces latency
  - Increases performance
  - Offload requests from origin
- Only pay for what you use
- Upload your code to AWS Lambda and deploy globally

Simple HTTP Manipulations

Manipulate Headers

A/B Testing



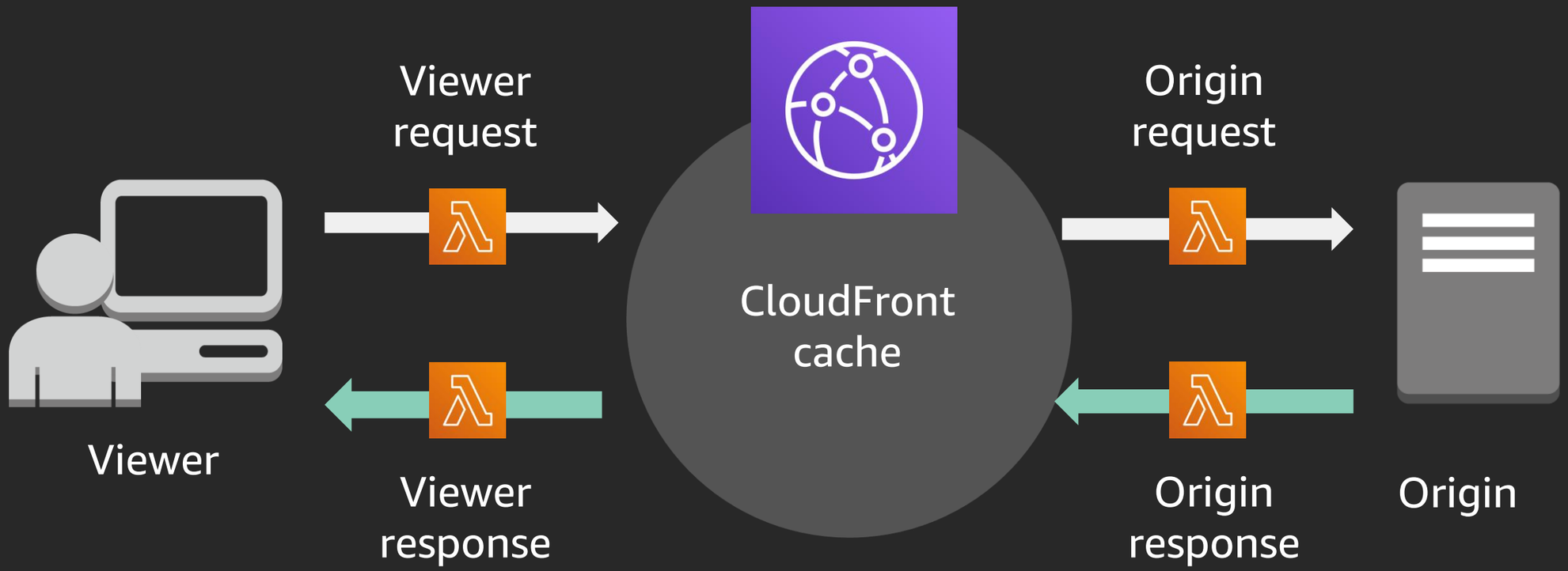


Add Secure Headers
Enforce Cache-Control Headers
Normalise User-Agent

Lambda@Edge use cases

Dynamic content generation	Origin independence
Image manipulation	Pretty URLs
Render pages	API wrapper
Redirections	Authorization
SEO optimization	Bot mitigation

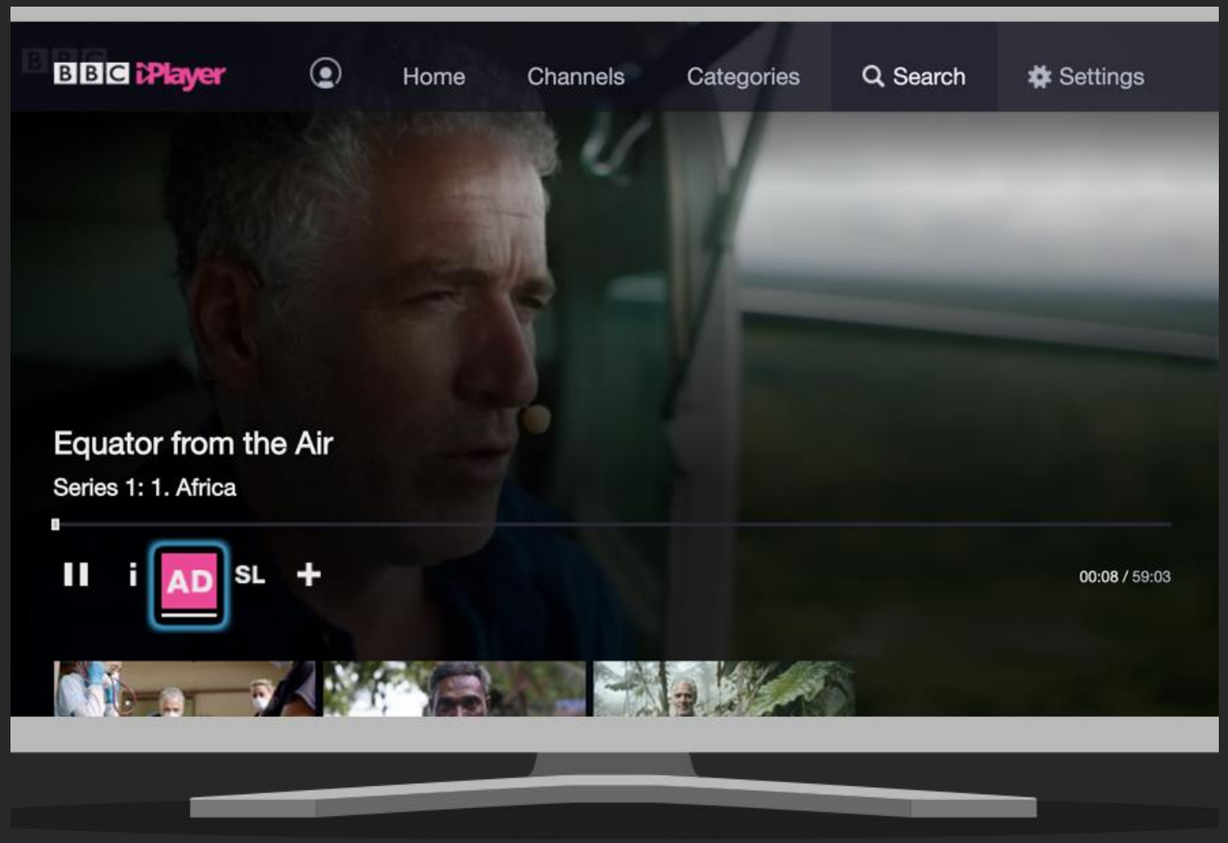
CloudFront and Lambda@Edge



BBC iPlayer overview

Video streaming service available in the UK

Available on a wide range of set-top boxes, streaming sticks, and Smart TVs, BBC iPlayer provides access to the BBC’s on-demand and live content



Project overview

- Many different TVs that we need to support

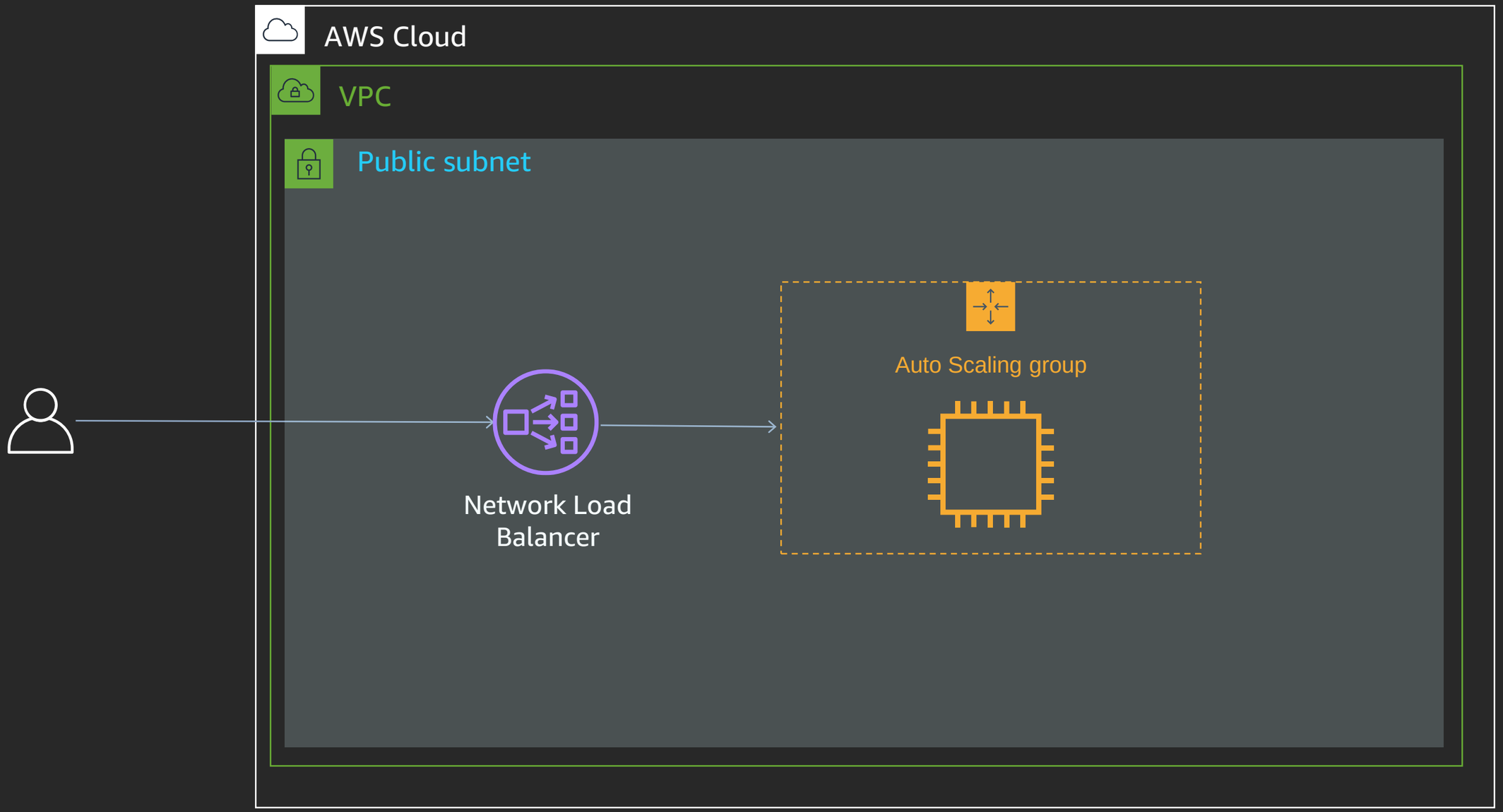
- Each TV has different requirements
  - Different HTML
  - Different root element
  - Different content-type header

```
<script type='text/javascript'>
  function accessfunction(json) {
    try {
      require('antie/application').getCurrentApplication().getDevice().nativeCallback(json);
    } catch (ex) {
      if (typeof window.postMessage === 'function') {
          var data = JSON.parse(json);
          window.postMessage(data, '*');
      }
    }
  }
</script>
```

```
<script type="text/javascript">
  Windows.UI.WebUI.WebUIApplication.addEventListener("activated", function (args) {
    if (typeof window.postMessage === 'function') {
      var data = {
        kind: args && args.kind,
        rawUri: args.detail.length && args.detail[0] && args.detail[0].uri && args.detail[0].uri.rawUri
      };

      window.postMessage(data, '*');
    }
  });
</script>
```

Original deployment overview



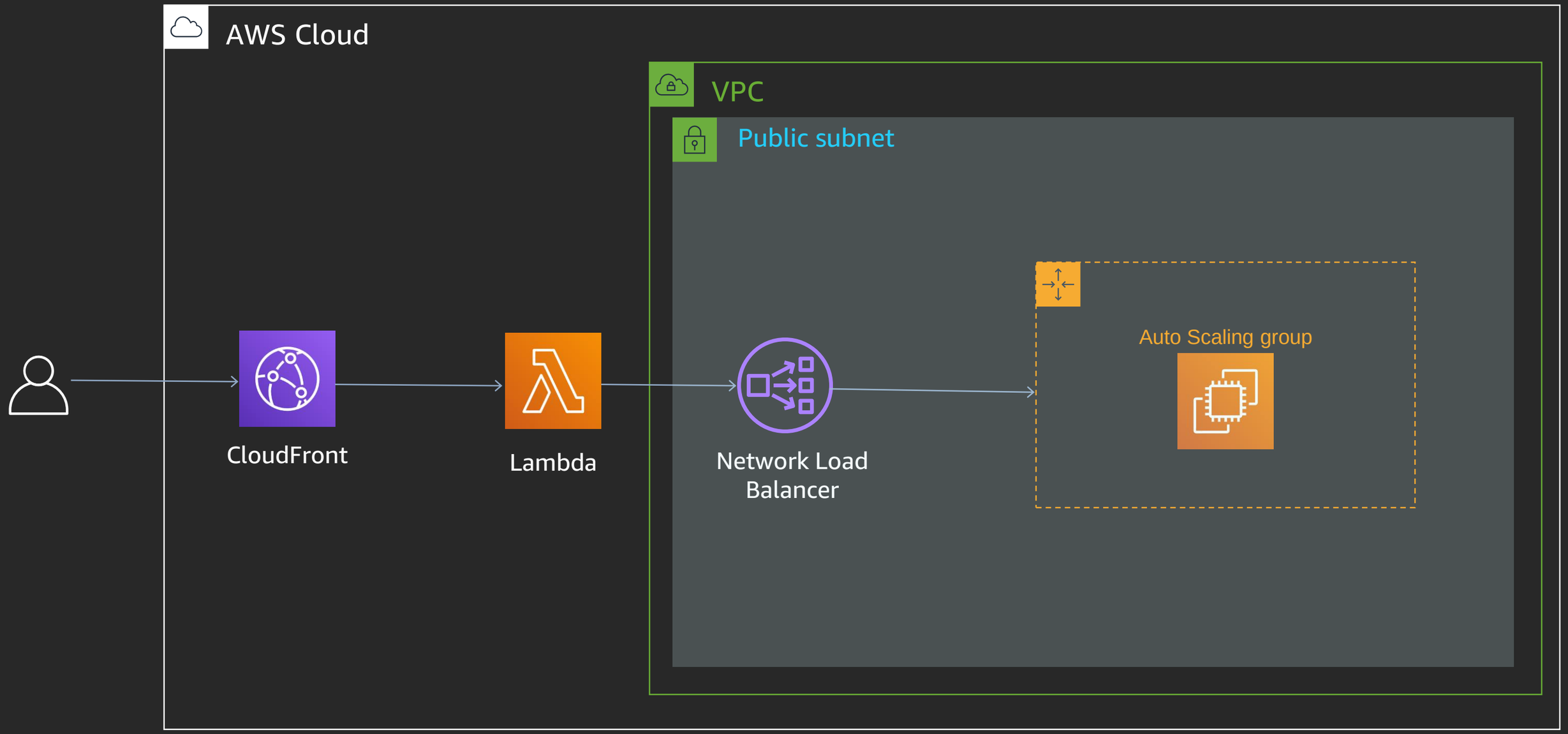
Challenges with original approach

- Fleet of EC2 instances always running
- Had to scale quickly for spiky traffic
- Unable to cache response

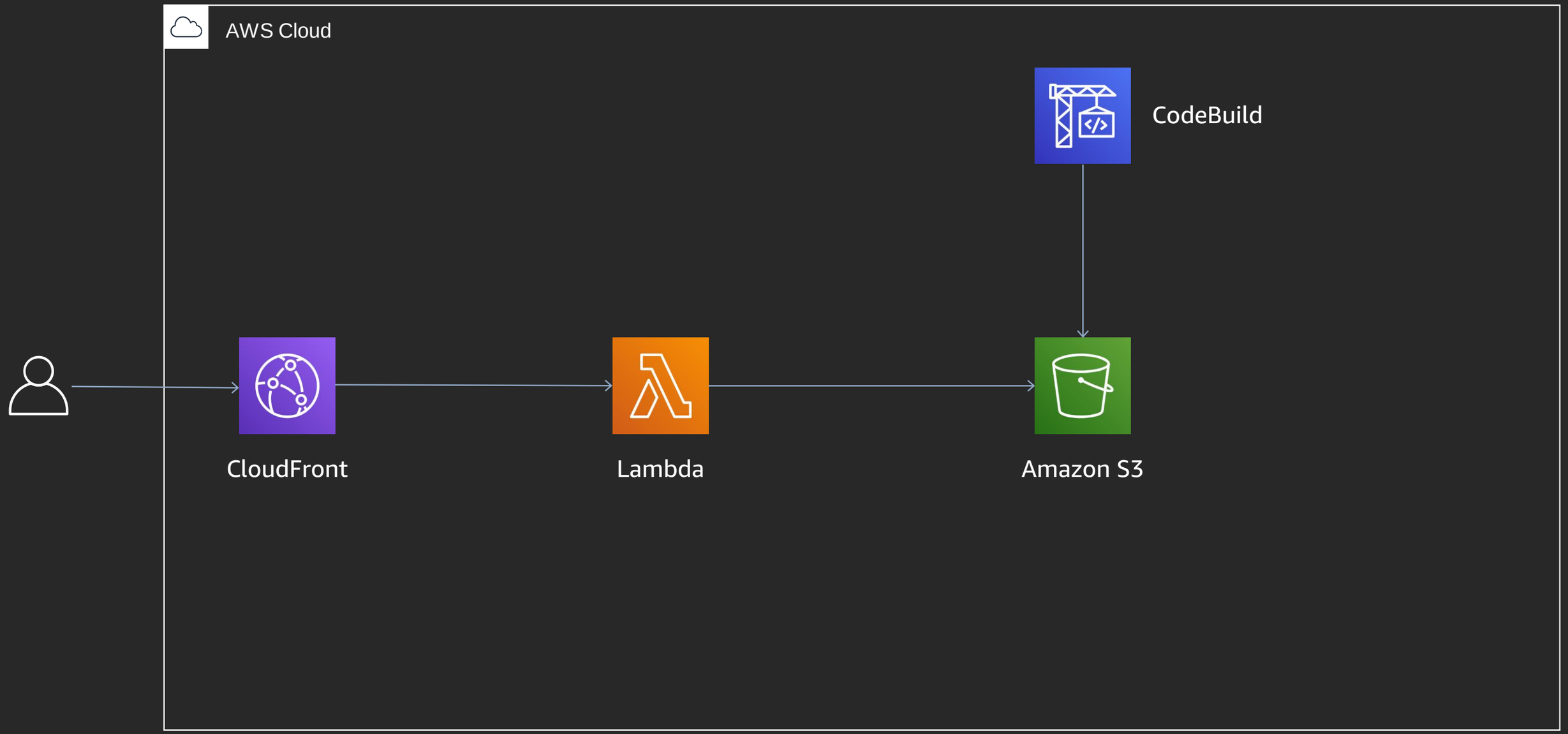
Enter Lambda@Edge

- No need to manage infrastructure
- Multi-region with minimal effort
- Familiar languages and environment

First phase

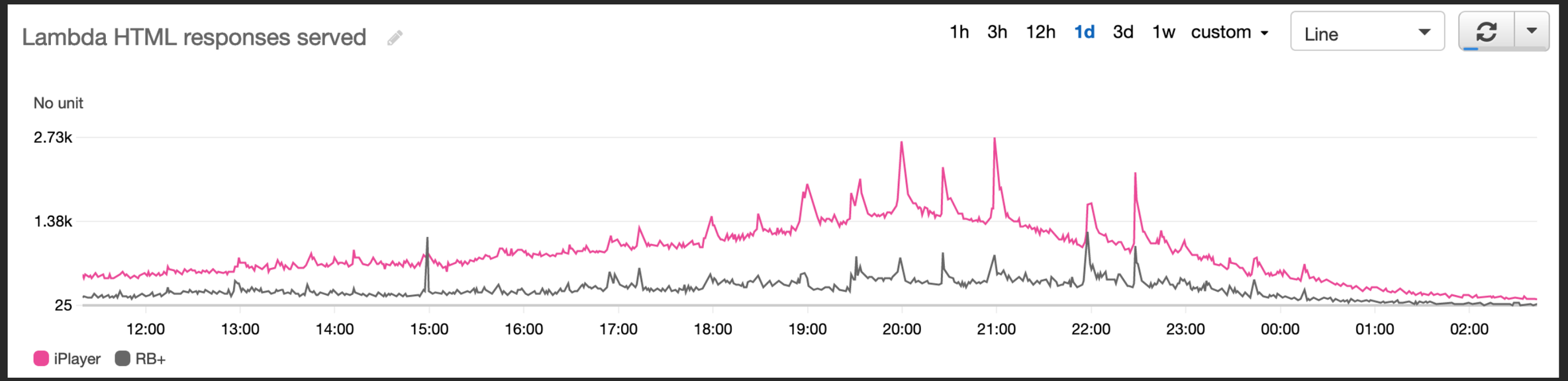

AWS Cloud
VPC
Public subnet
Auto Scaling group
CloudFront
Lambda
Network Load Balancer

Second phase



How did this help?

- Native integration with CloudWatch
- Infrastructure managed for us
- Scaling and capacity managed for us



Challenges faced

- Regions

- US East 1

What’s next?

- Applying our learnings elsewhere

- Broadcast capabilities provider

Questions?

Any questions on how the BBC are using Lambda@Edge?

Do you have a case for which you are considering Lambda@Edge?

Additional resources

- https://aws.amazon.com/lambda/edge/
- https://aws.amazon.com/blogs/networking-and-content-delivery/lambdaedge-design-best-practices/

- https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda-edge-testing-debugging.html

- AWS blog: Cookie synching for AdTech, visitor prioritization for e-commerce, paywall for publishers

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AWS Certified Advanced Networking - Specialty exam

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Thank you!

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