



# Introducing AWS Edge location in Qatar

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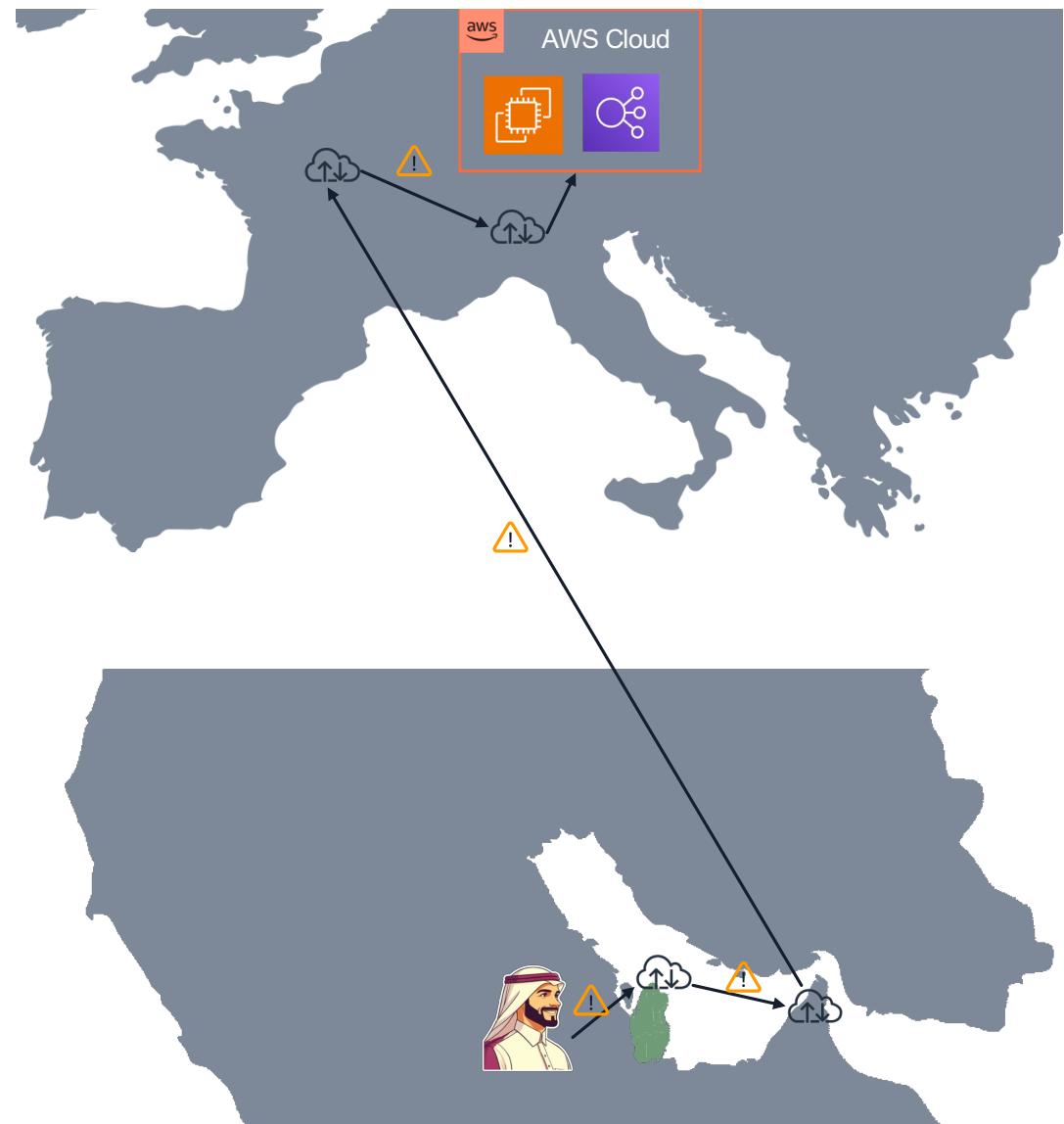


## Khalid

- CISO of a startup in Doha
- Loves football
- Big fan of Akram Afif
- Machboos is his favorite dish

# The internet is too unpredictable to watch a live football match without buffering

- Khalid's home
- ISP gateway
- Transit provider
- Transit provider
- AWS border network
- Stream hosted in AWS region





**Khalid is considering  
to cancel his premium  
subscription**

**Lower quality**



**Buffering**



“Slow is the new  
broken”

(most likely) Steve Souders

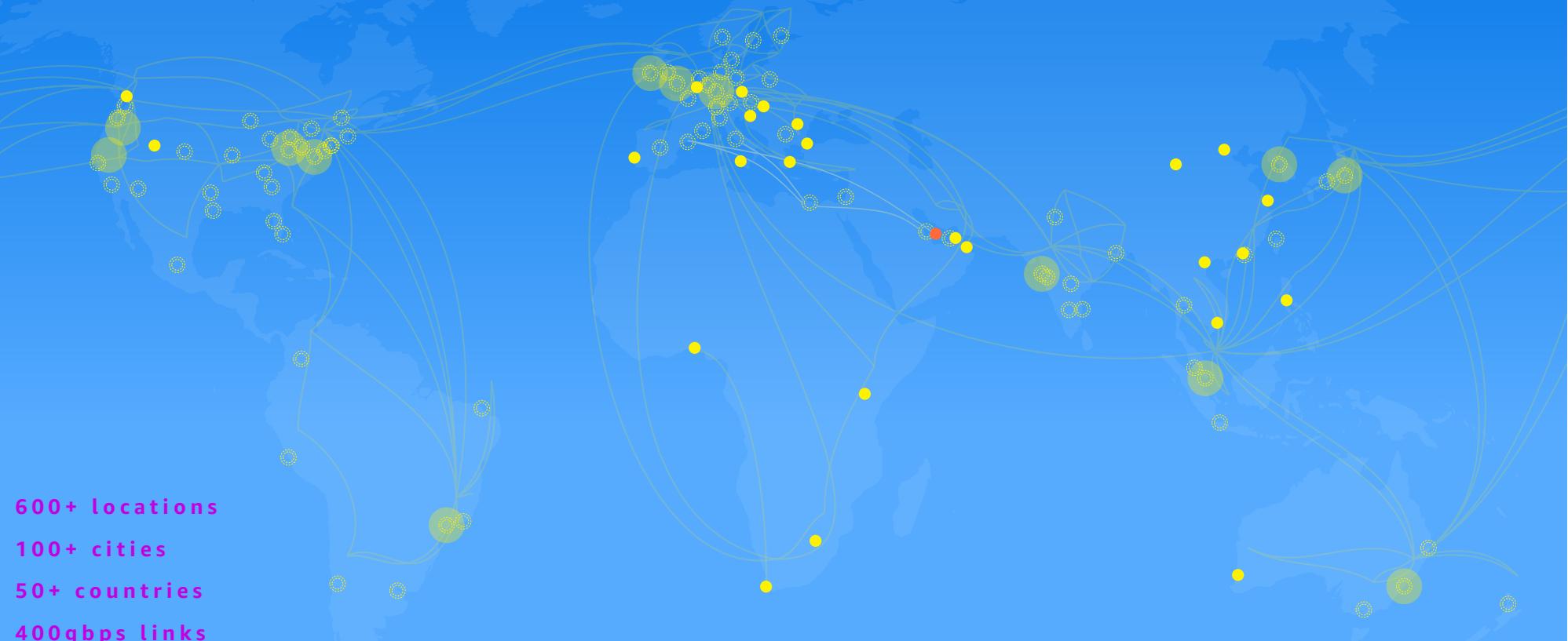


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# AWS edge network

KEY

- Edge location
- Multiple edge locations
- Regional Edge caches



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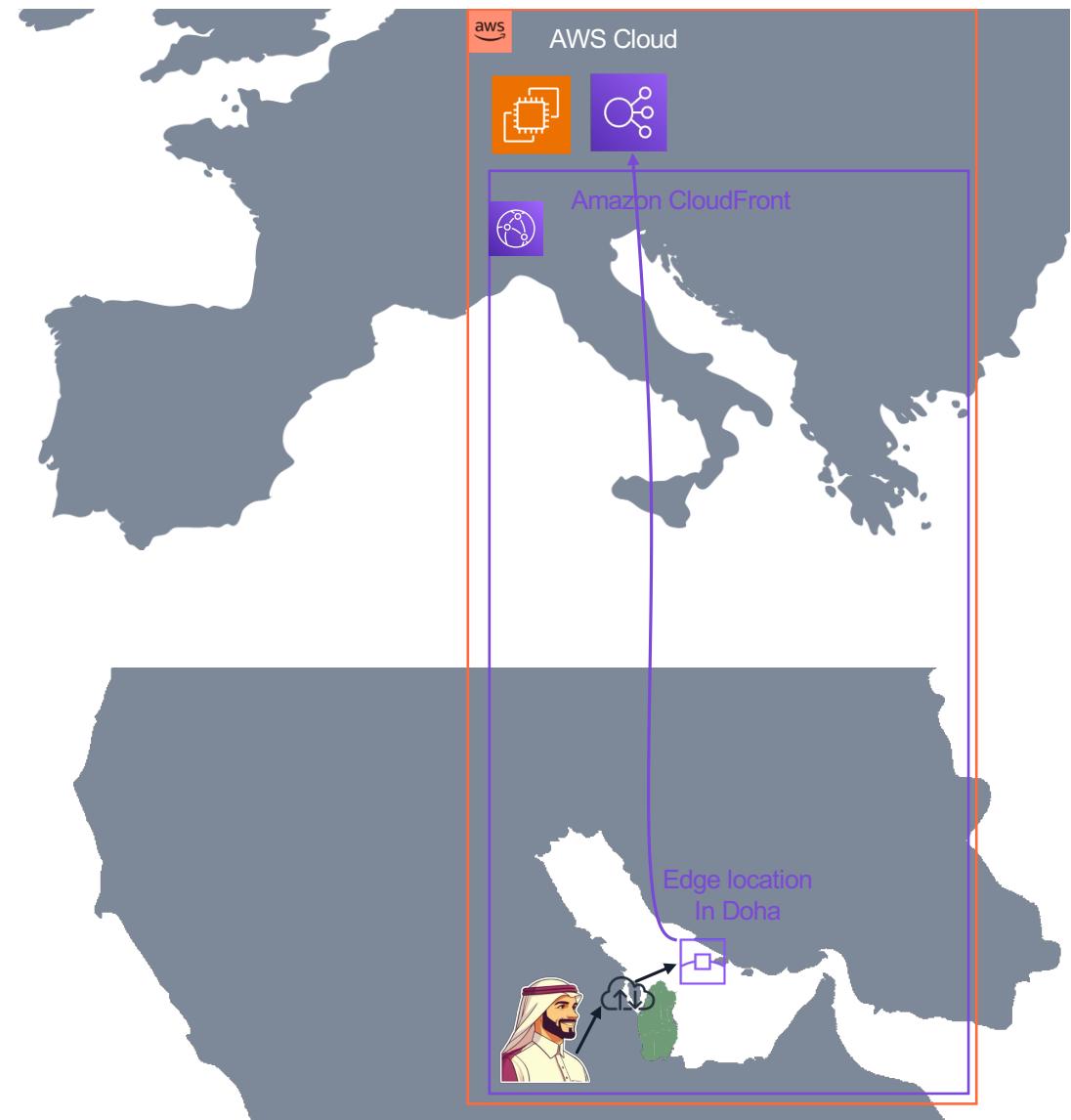


## Amazon CloudFront

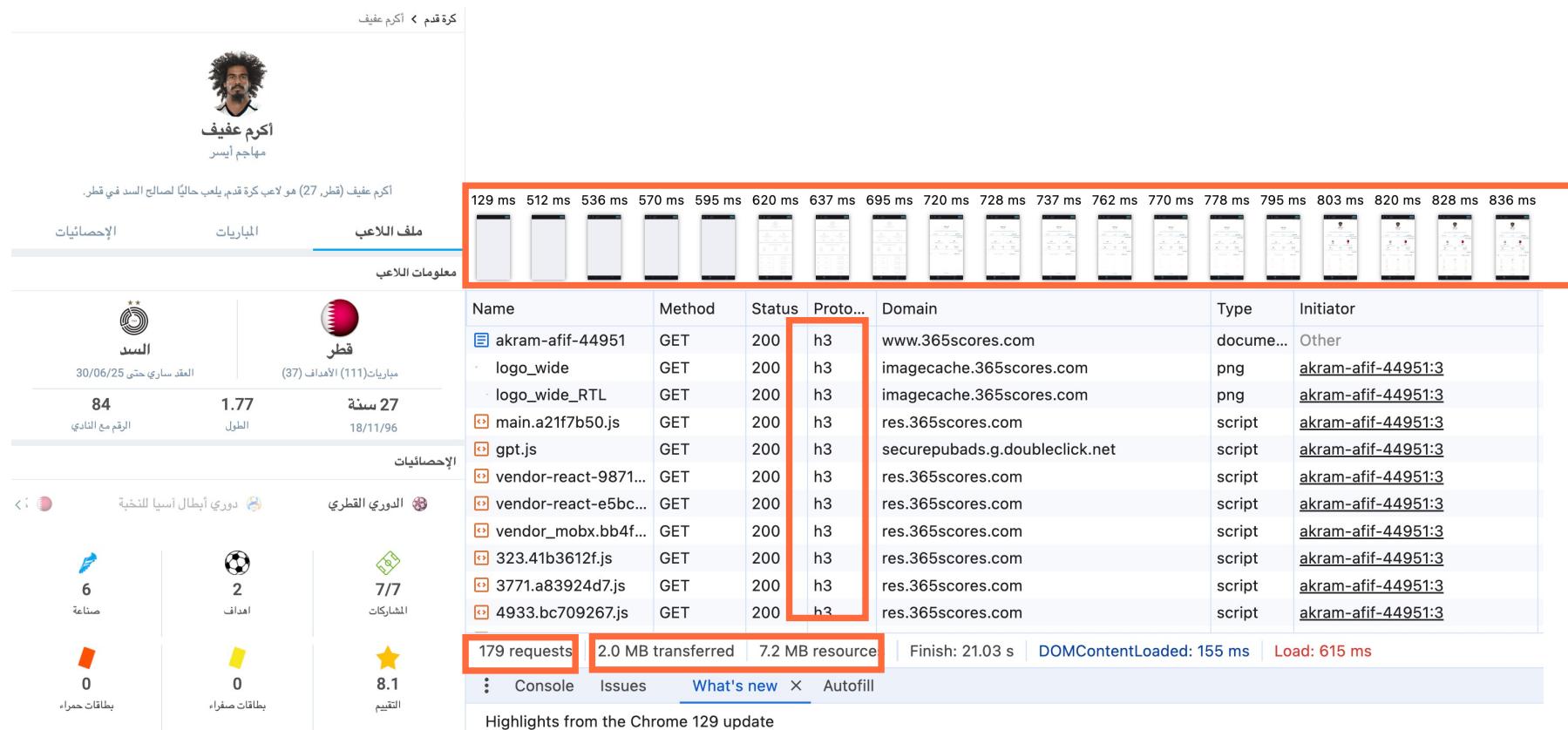
- AWS's Content Delivery Network (CDN)
- Global AWS service
- Built with the cloud on demand vision
- Foundational building block for Well Architected applications on AWS
- Expansion in the Middle-East

# AWS cloud meets Khalid in Qatar

- Video segments are served locally from Doha
- Cache misses on private network



# Web pages load faster



كره قدم > أكرم عفيف

أكرم عفيف (قطر, 27) هو لاعب كرة قدم، يلعب حالياً لصالح السد في قطر.  
مهاجم أيسر

الإحصائيات المباريات ملف اللاعب معلومات اللاعب

السد قطر 30/06/25 العقد ساري حتى (37) مباريات (111) الأهداف

84 1.77 سنة 27 الرقم مع النادي الطول 18/11/96

الإحصائيات الدوري القطري الدوري القطري 6 2 7/7 0 0 8.1

صناعة أهداف المشاركات بطاقات حمراء بطاقات صفراء التقييم

Name	Method	Status	Proto...	Domain	Type	Initiator
akram-afif-44951	GET	200	h3	www.365scores.com	document	Other
logo_wide	GET	200	h3	imagecache.365scores.com	png	akram-afif-44951:3
logo_wide_RTL	GET	200	h3	imagecache.365scores.com	png	akram-afif-44951:3
main.a21f7b50.js	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
gpt.js	GET	200	h3	securepubads.g.doubleclick.net	script	akram-afif-44951:3
vendor-react-9871...	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
vendor-react-e5bc...	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
vendor_mobx.bb4f...	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
323.41b3612f.js	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
3771.a83924d7.js	GET	200	h3	res.365scores.com	script	akram-afif-44951:3
4933.bc709267.js	GET	200	h3	res.365scores.com	script	akram-afif-44951:3

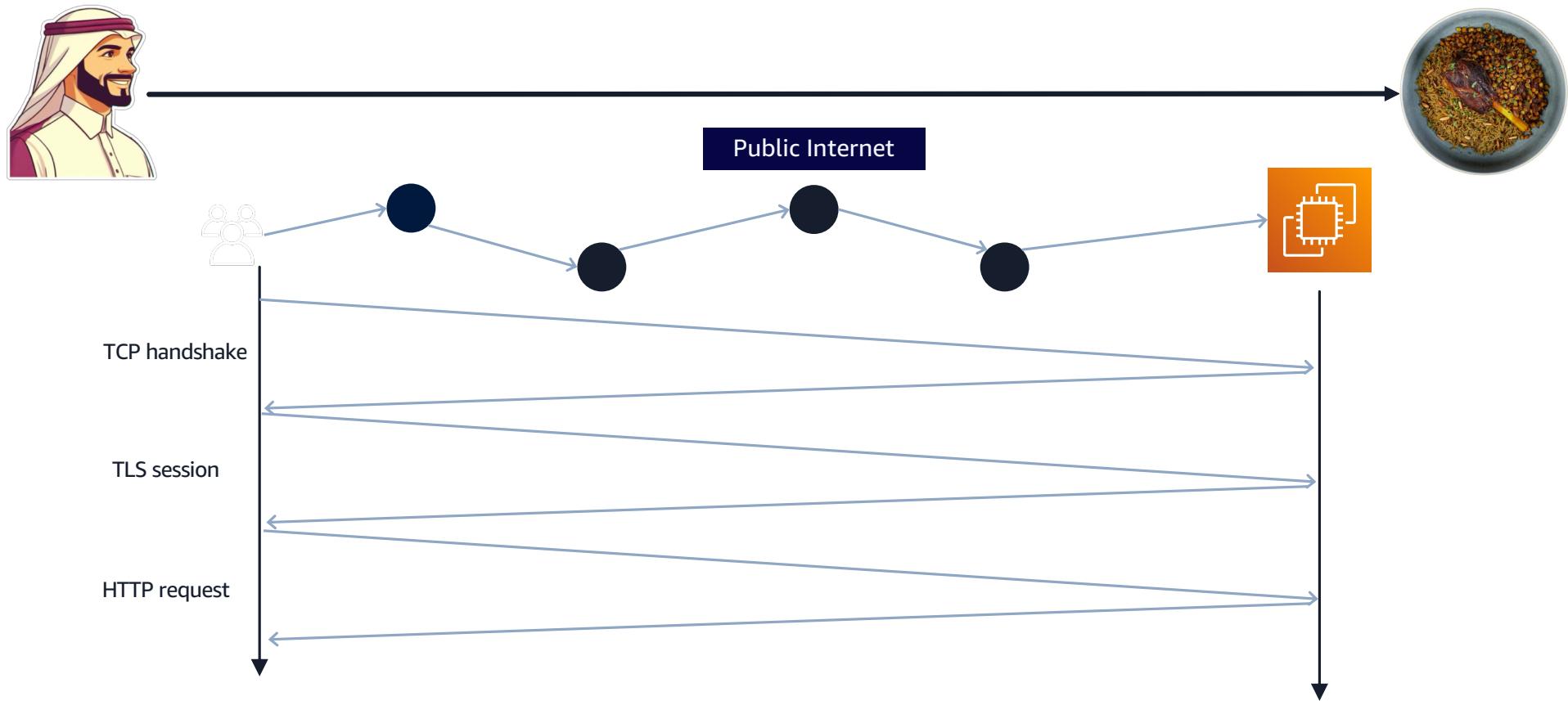
179 requests 2.0 MB transferred 7.2 MB resource Finish: 21.03 s DOMContentLoaded: 155 ms Load: 615 ms

Console Issues What's new Autofill

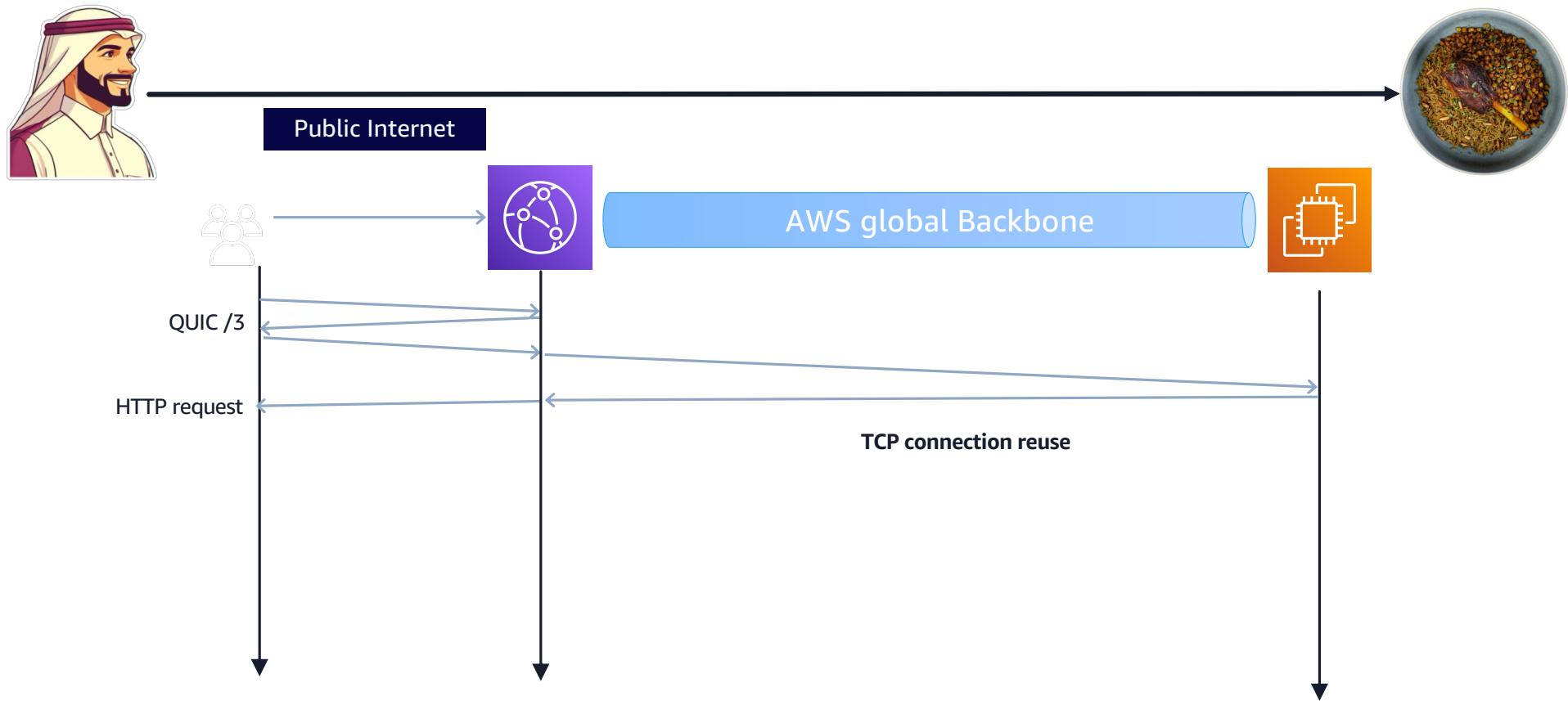
Highlights from the Chrome 129 update



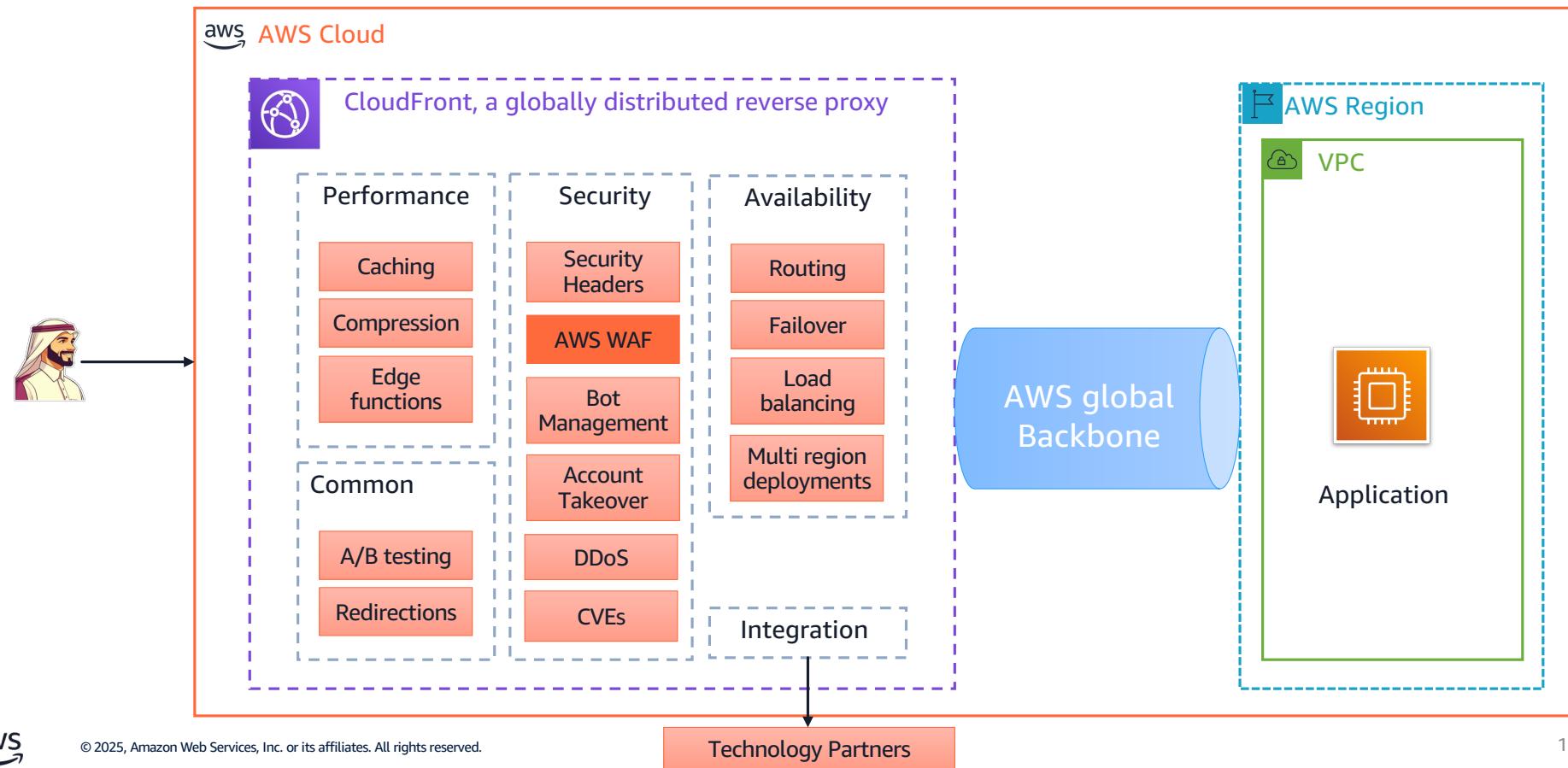
# API without CDN



# API acceleration with CloudFront



# Mental model of CloudFront



# Edge functions available with CloudFront

## Lambda@Edge



- Long-running workloads
- More complex use cases
- Scaling considerations

### Use cases

- Content customization
- Store-locator functionality
- Integration with SaaS vendors
- Waiting room functionality

## CloudFront Functions



- Light-weight functions
- Highest scale applications
- Access to Key Value Store

### Use cases

- URL rewriting
- Serving redirects at the edge
- Visitor session authentication
- HTTP response manipulation

## Example use-cases from customers



Feature flags



Image Optimization



Multi-tenant  
routing



Pernod Ricard

Origin-less URL  
shortener



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# Cybersecurity



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# Security with CloudFront

Same architecture for local and international markets

Works well with AWS

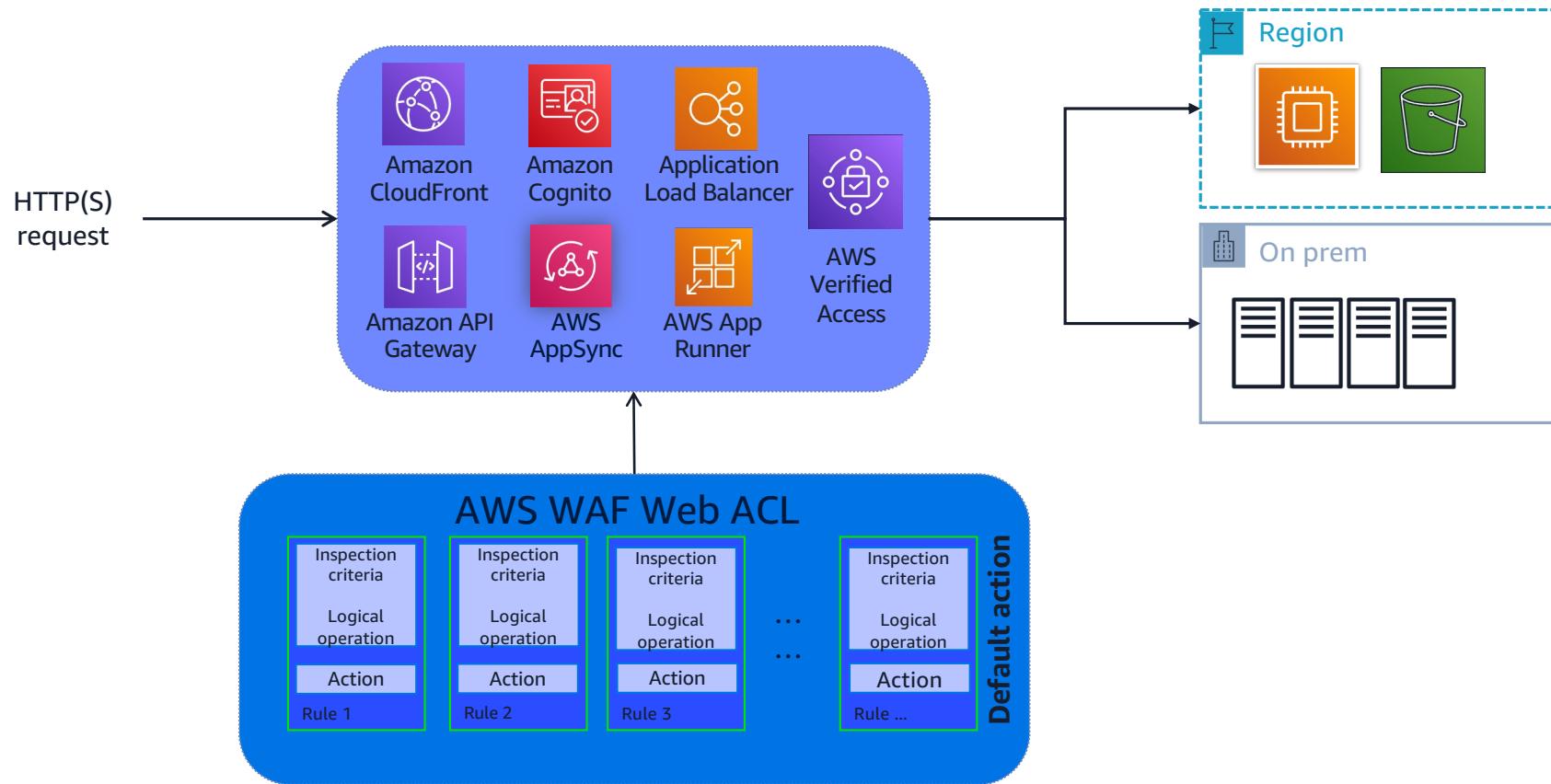
Out of the box complete protection against layer 3 and layer 4 DDoS attacks

Security at the edge

Advanced Web Application Firewall (WAF) capabilities by without WAF infrastructure to manage



# How does AWS WAF work?



# Khalid's threat modeling

## DDoS attacks

Protect the availability of APIs



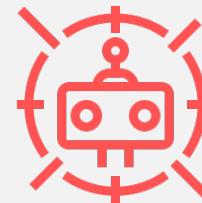
## Account Takeover

Protect login endpoints from credential stuffing



## GenAI costs

Avoid a denial of wallet situation with the customer service chatbot



## OWASP top 10

Baseline security



# DDoS protection

1M

Yearly DDoS attacks

EB

Data analyzed /min

100M

Daily interactions  
with honeypots

**Threat Intel**

Anycast

Blackwatch

Vanguard

Madpot

**Security of the Cloud**

IP reputation

Rate limits

Automatic DDoS detection

Shield Response Team

**Security in the Cloud**



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# Stop bots from abusing GenAI endpoints with Bot Control

277\$

GenAI cost saved for 1\$ invested in Bot Control

NIS221 – re:Inforce 2024

Bot signatures

JavaScript challenge to verify browser capabilities

Client side fingerprinting to detect automation frameworks

Behavioral analysis using session id

ML based detection of coordinated activities

CAPTCHA solving

Let's confirm you are human  
Choose all the chairs



⟳ ⓘ 🔍  
English ▾

Confirm



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# Next steps?



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# Application Security & Performance

RESOURCE



<https://s12d.com/edge4dev>



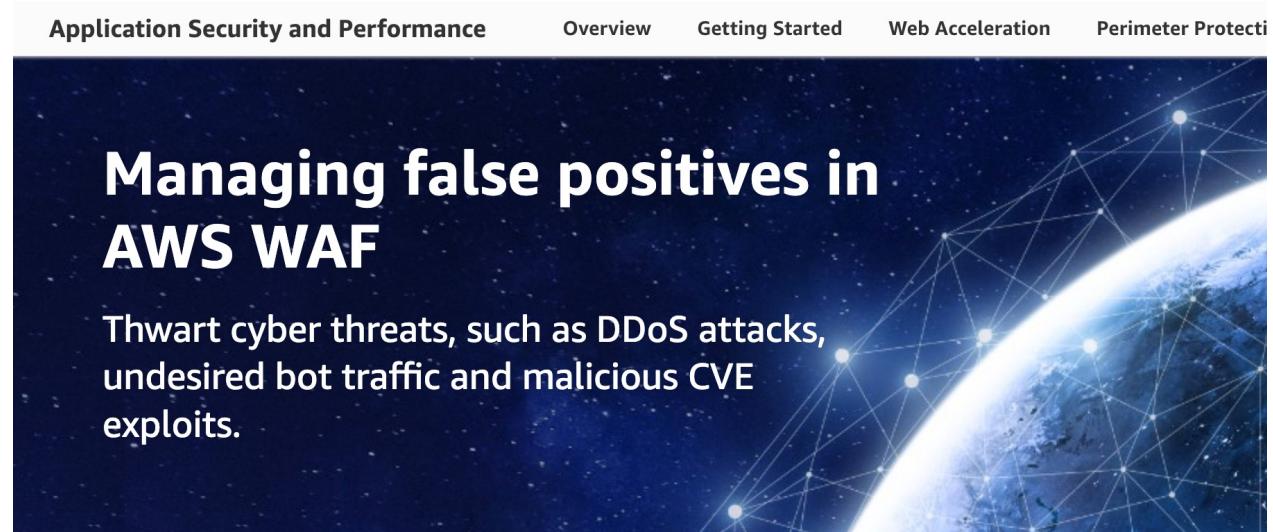
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Application Security and Performance

Overview Getting Started Web Acceleration Perimeter Protection

## Managing false positives in AWS WAF

Thwart cyber threats, such as DDoS attacks, undesired bot traffic and malicious CVE exploits.



PAGE CONTENT

[Overview](#)

[Designing WAF rules with low false positives](#)

## Overview

Adding security controls such as WAF to a web application, increase positives are the occurrences of blocking legitimate user requests, which Managing false positives include designing rules that minimize them.

# Application Security & Performance

RESOURCE



<https://s12d.com/boutique>

fast-secure-e-commerce-demo

Cart Log in



**Bamboo Cutlery Set**  
Portable and reusable utensils made from sustainable bamboo....

**\$49.99**



**Refillable Glass Cleaning Kit**  
All-purpose cleaner in a reusable glass bottle with concentr...

**\$0.99**



**Organic Cotton T-shirt**  
For sensitive skins and eco conscious fashion lovers....

**\$29.99**









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# Proof of Concept

Always on Free tier (1TB / month)

Bootstrap quickly using the AWS Console

Support by AWS and specialized partners

Private Pricing



# Thank you!

Achraf Souk

[in /achrafsouk](https://www.linkedin.com/in/achrafsouk)



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