

S V C 2 1 1

Introduction to AWS Global Accelerator

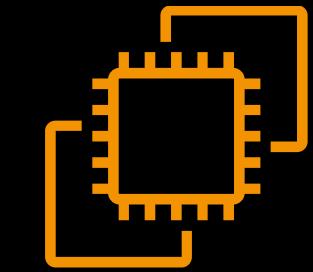
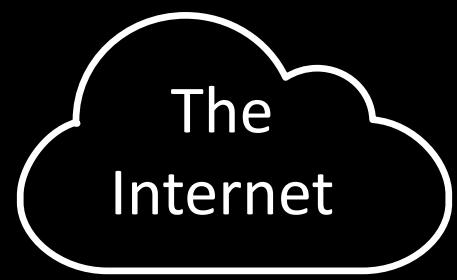
Matt Lehwess
Principal Solutions Architect
Amazon Web Services



What does an application deployment look like?

From a customer's perspective, with the focus on networking, of course...

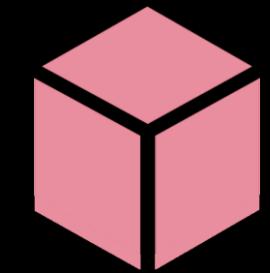
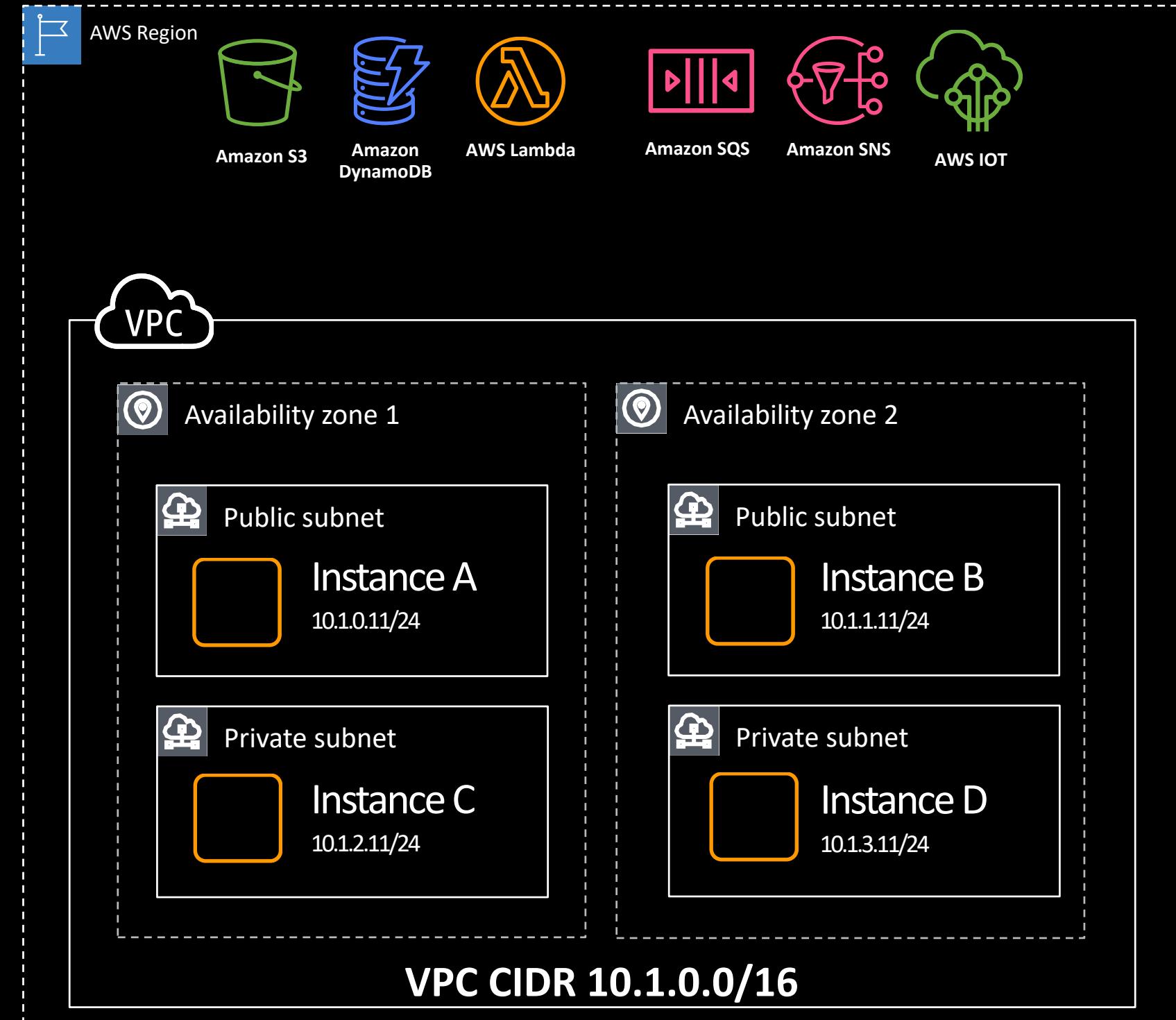
Let's take a closer look



Amazon EC2

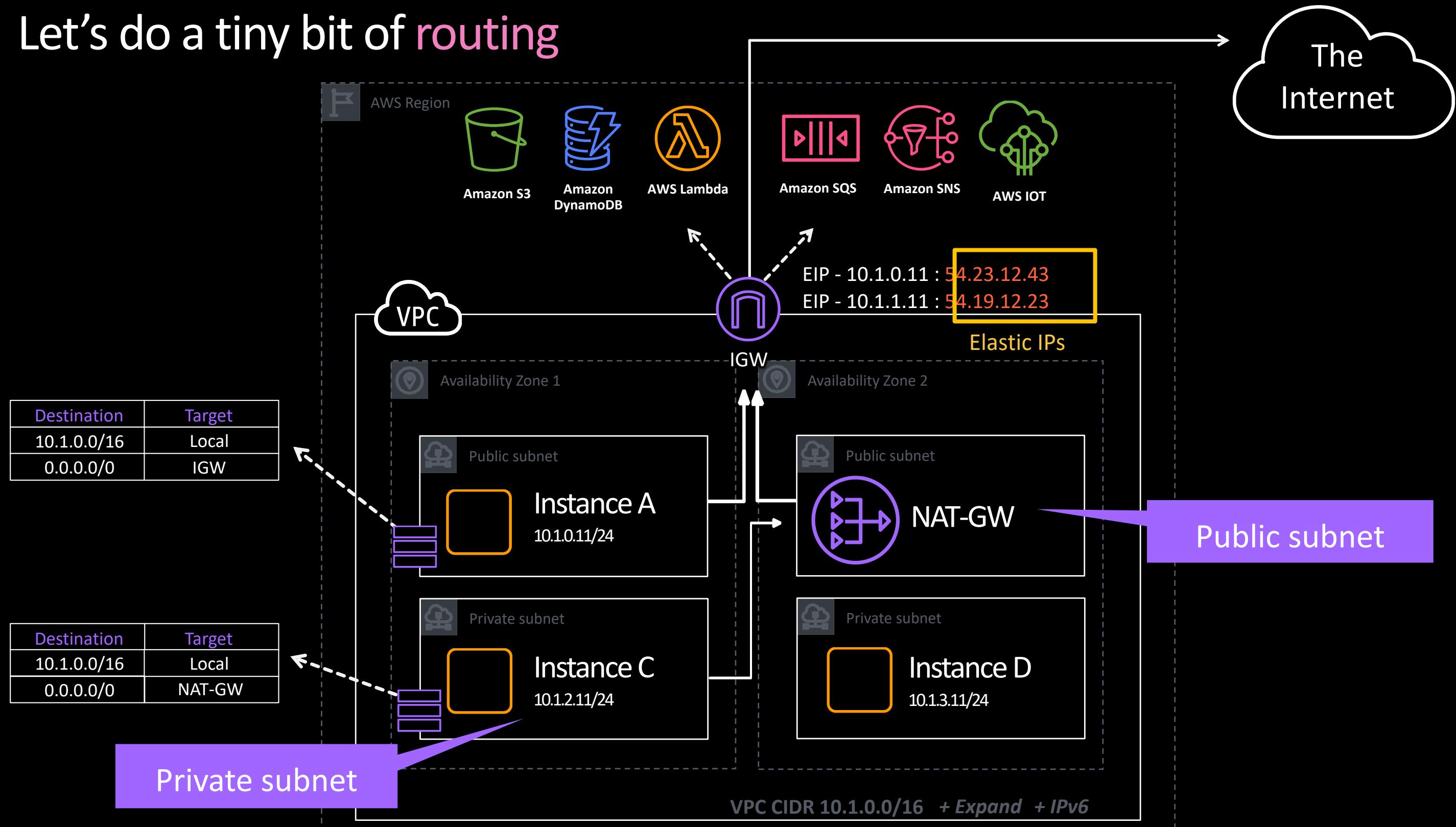


Amazon VPC

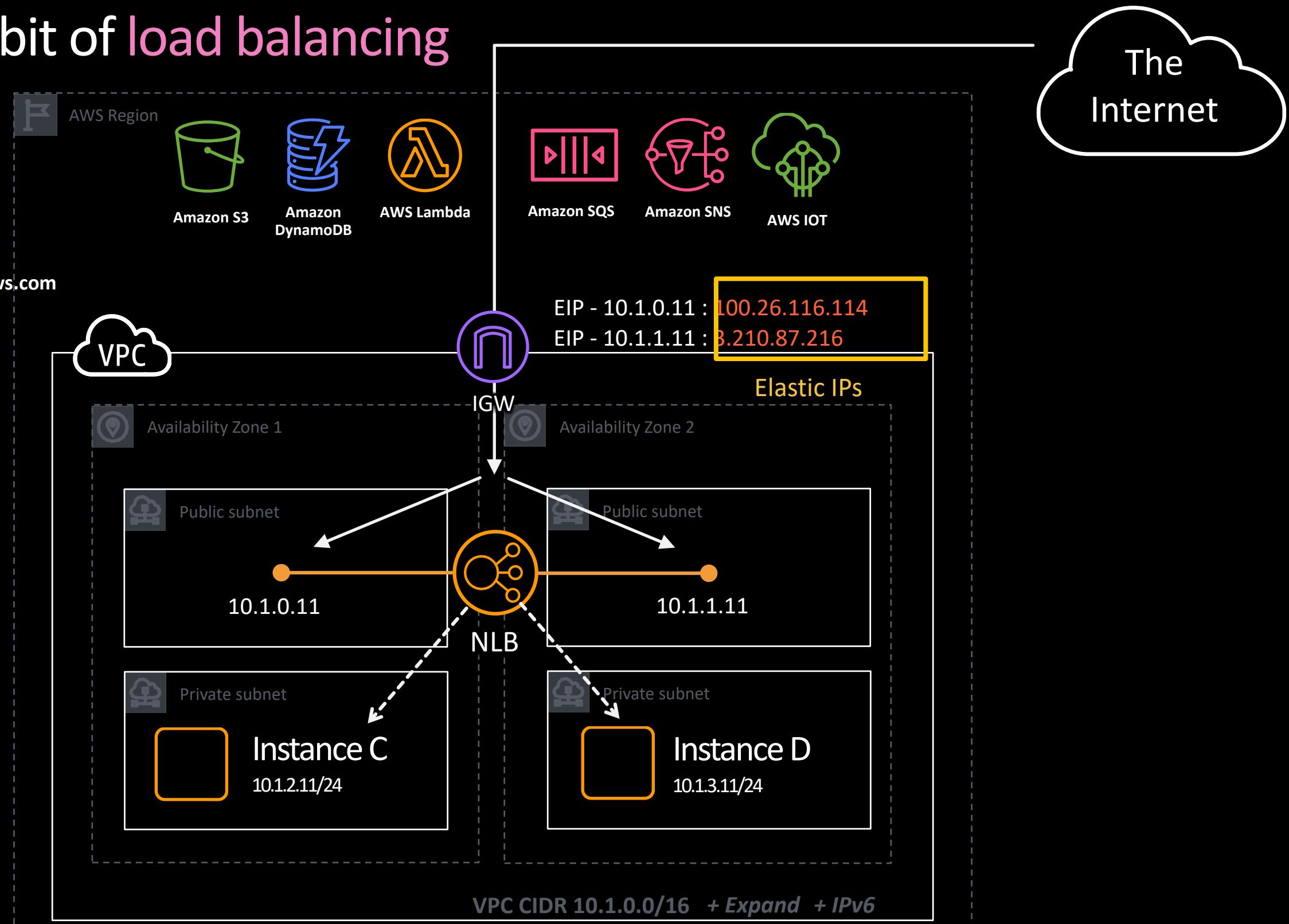


AWS Region

Let's do a tiny bit of routing

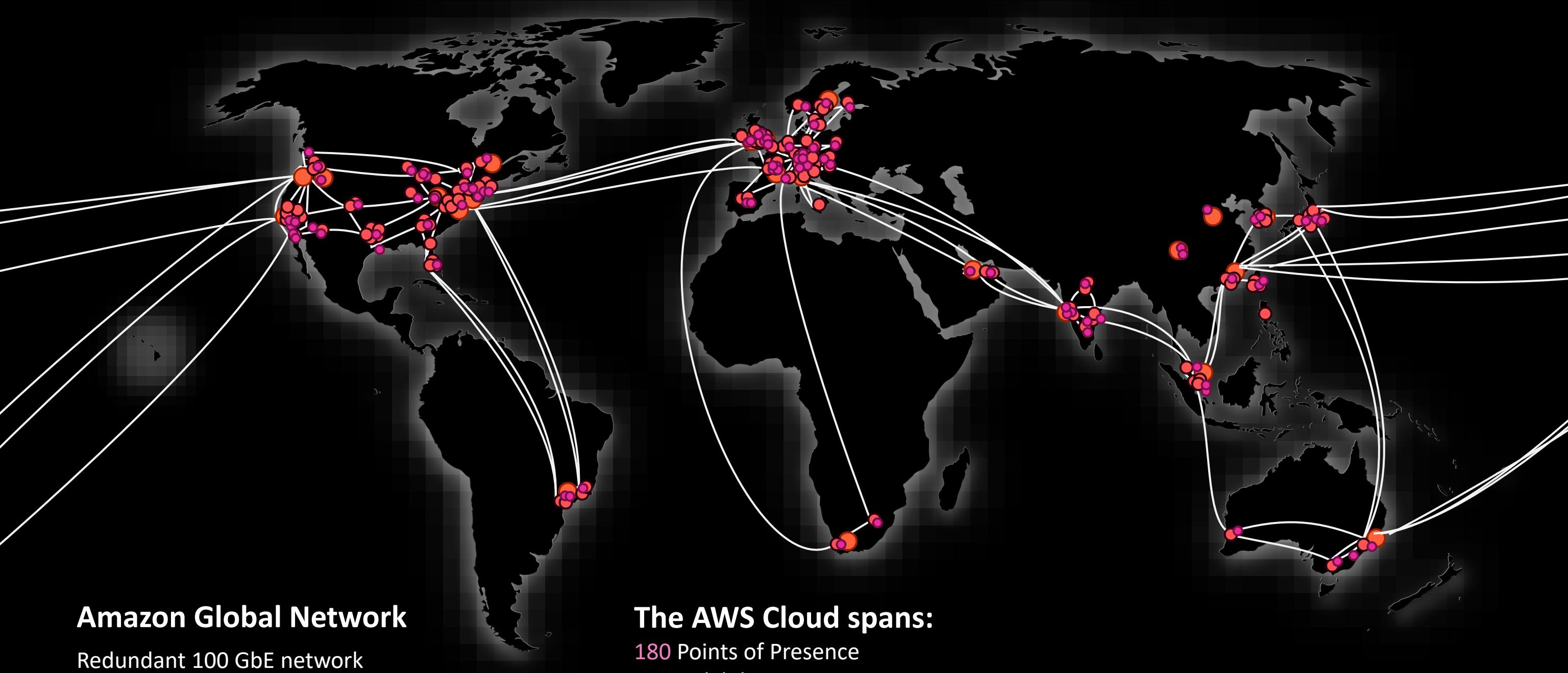


Let's do a tiny bit of load balancing

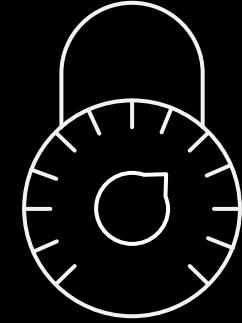


Cool, let's take this thing global

Okay...

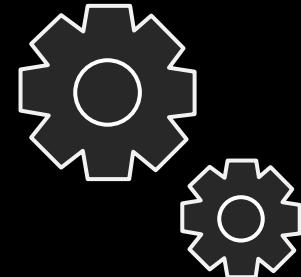


Why have a backbone network?



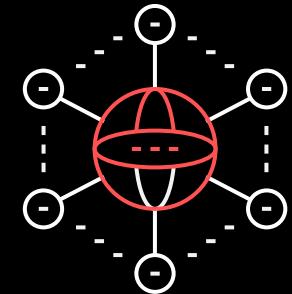
Security

Traffic traverses our infrastructure rather than the internet



Reliable performance

Controlling paths customer traffic traverses



Availability

Controlling scaling and redundancy



Connecting closer to customers

Avoiding internet hot spots or suboptimal external connectivity

All region-to-region traffic traverses the backbone*

* except within the People's Republic of China

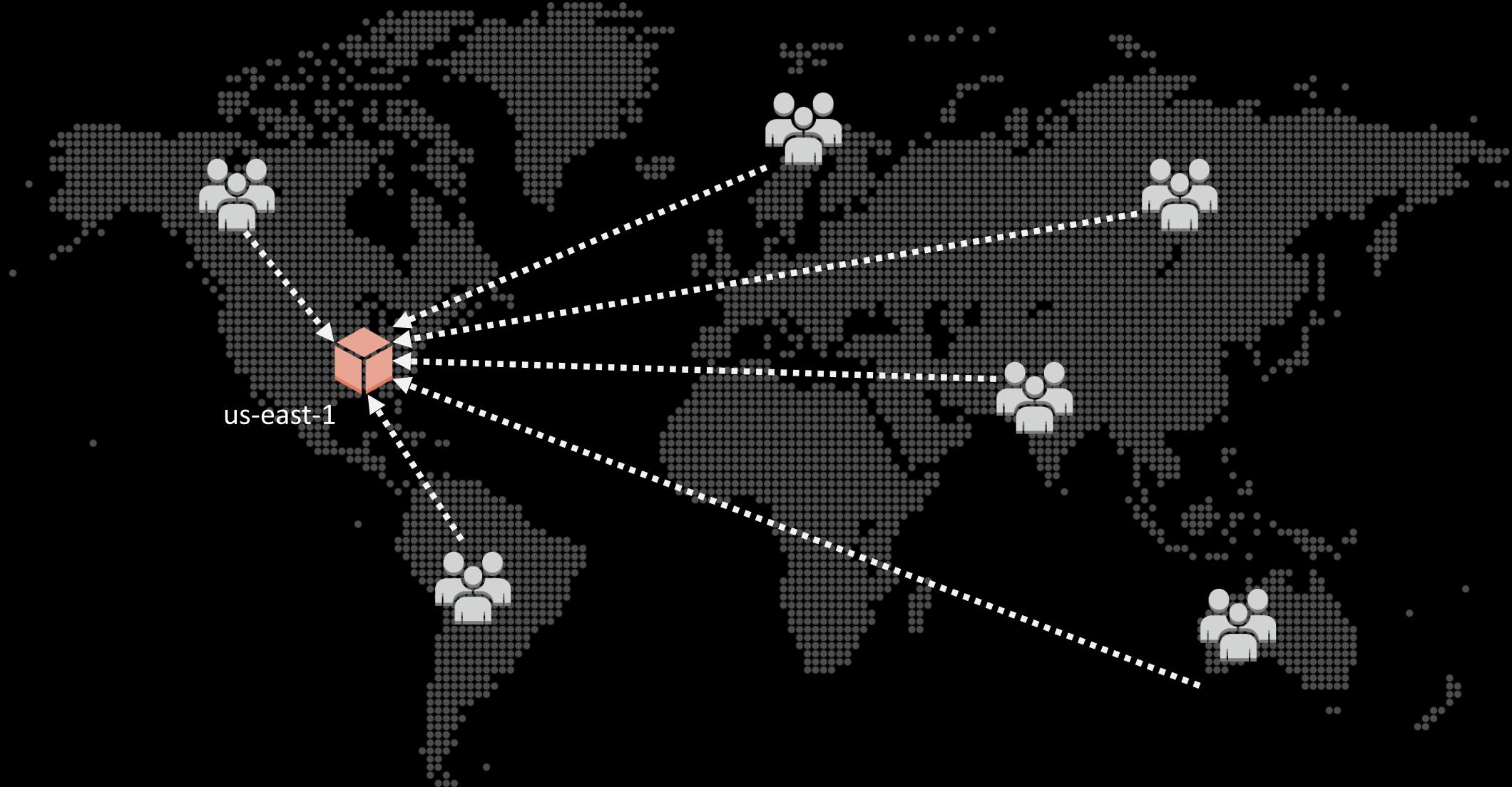
Single region deployment



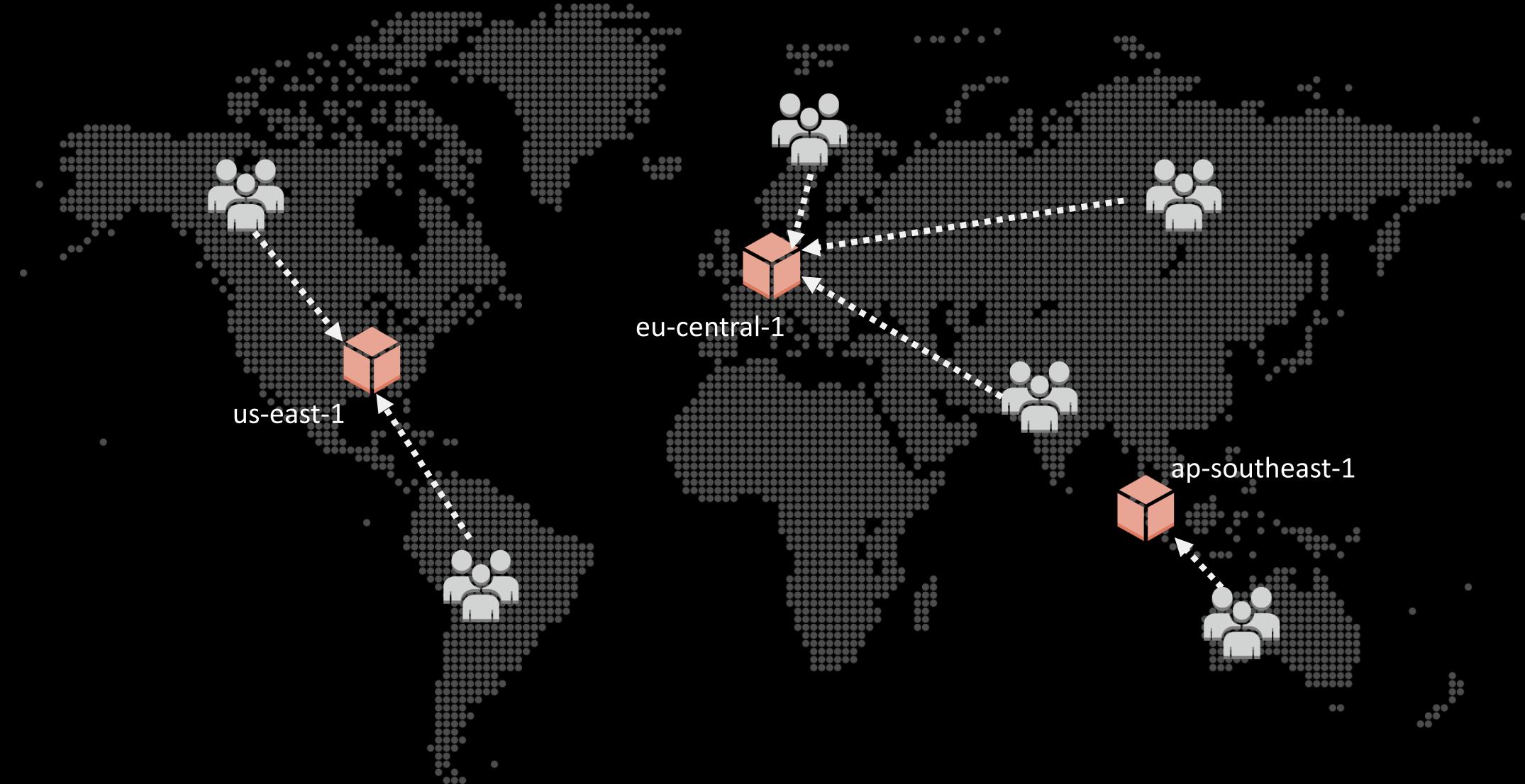
Single region deployment



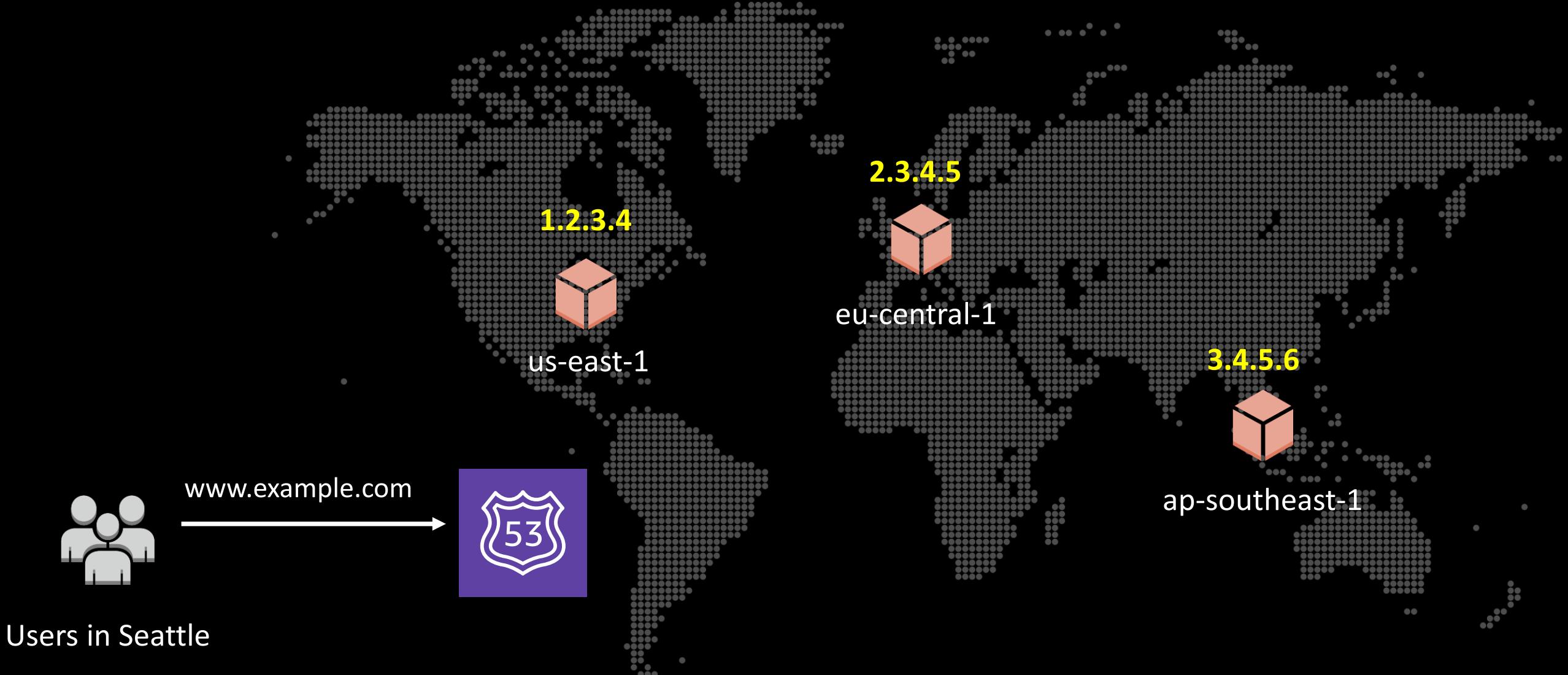
Single region deployment



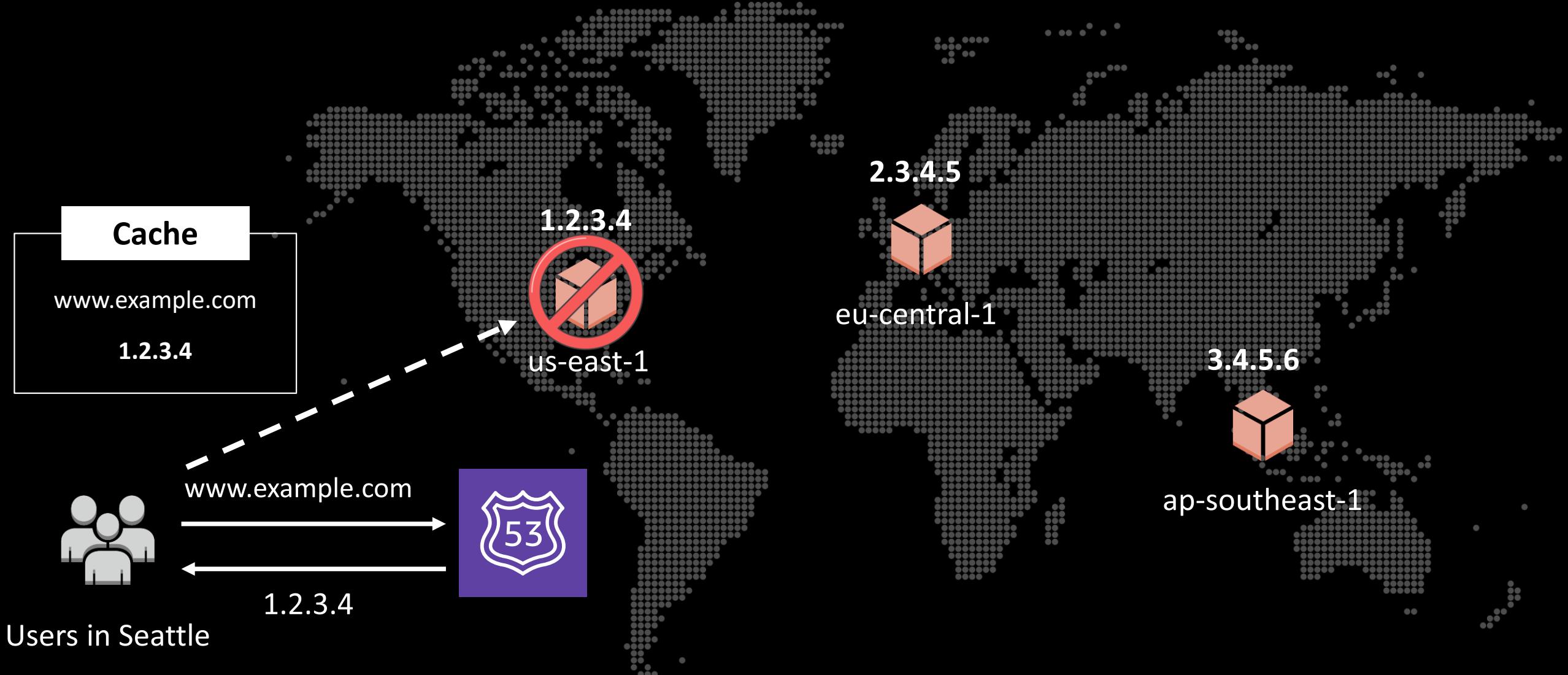
Multi-region deployment



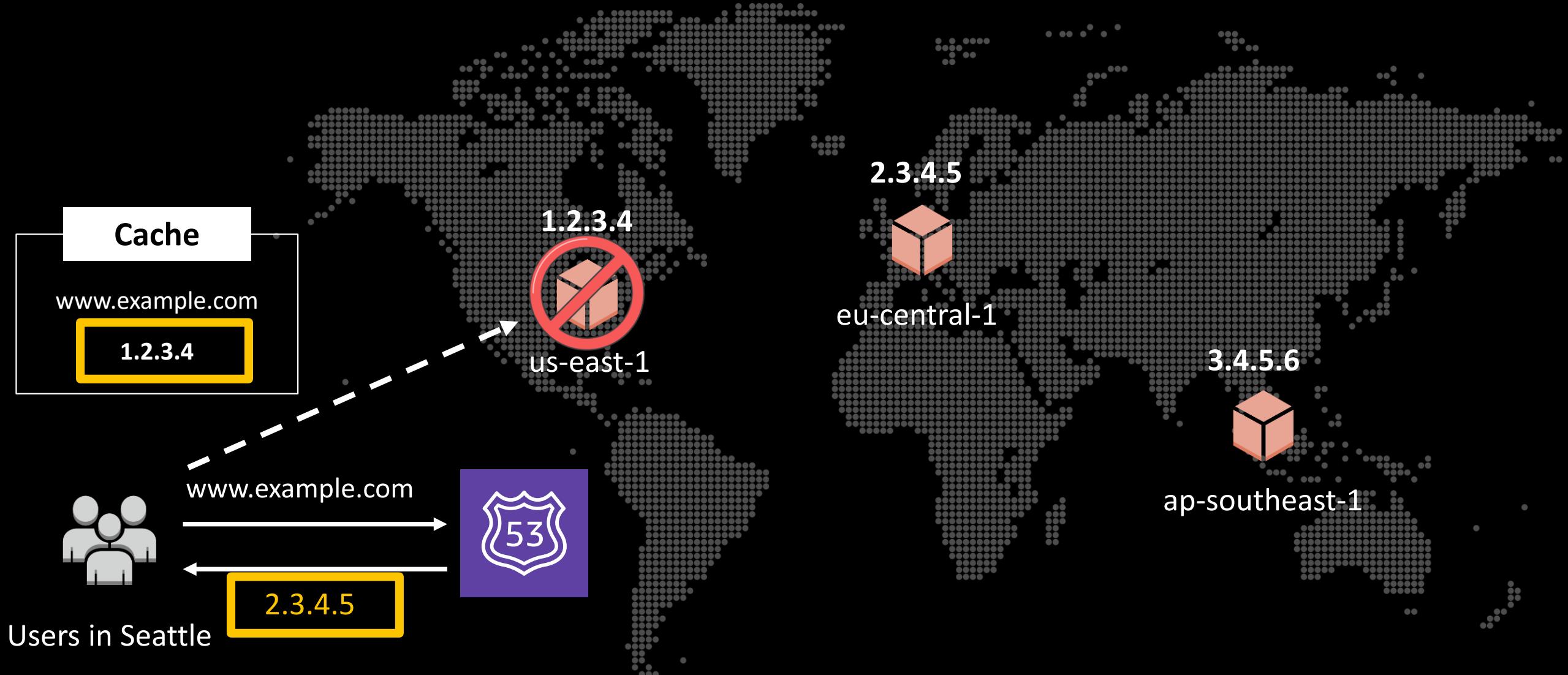
Global traffic management – before



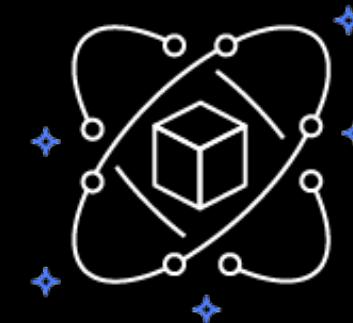
Global traffic management – before



Global traffic management – before



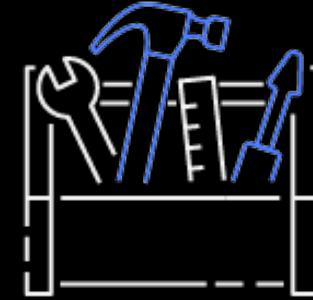
What challenges are customers facing today?



IP caches in client applications can be unreliable



Routing over the public internet leads to inconsistent performance



Complex IP configurations are cumbersome to manage

Introducing AWS Global Accelerator

A network layer service that you can deploy in front of your internet-facing applications to improve availability and performance for your globally distributed users

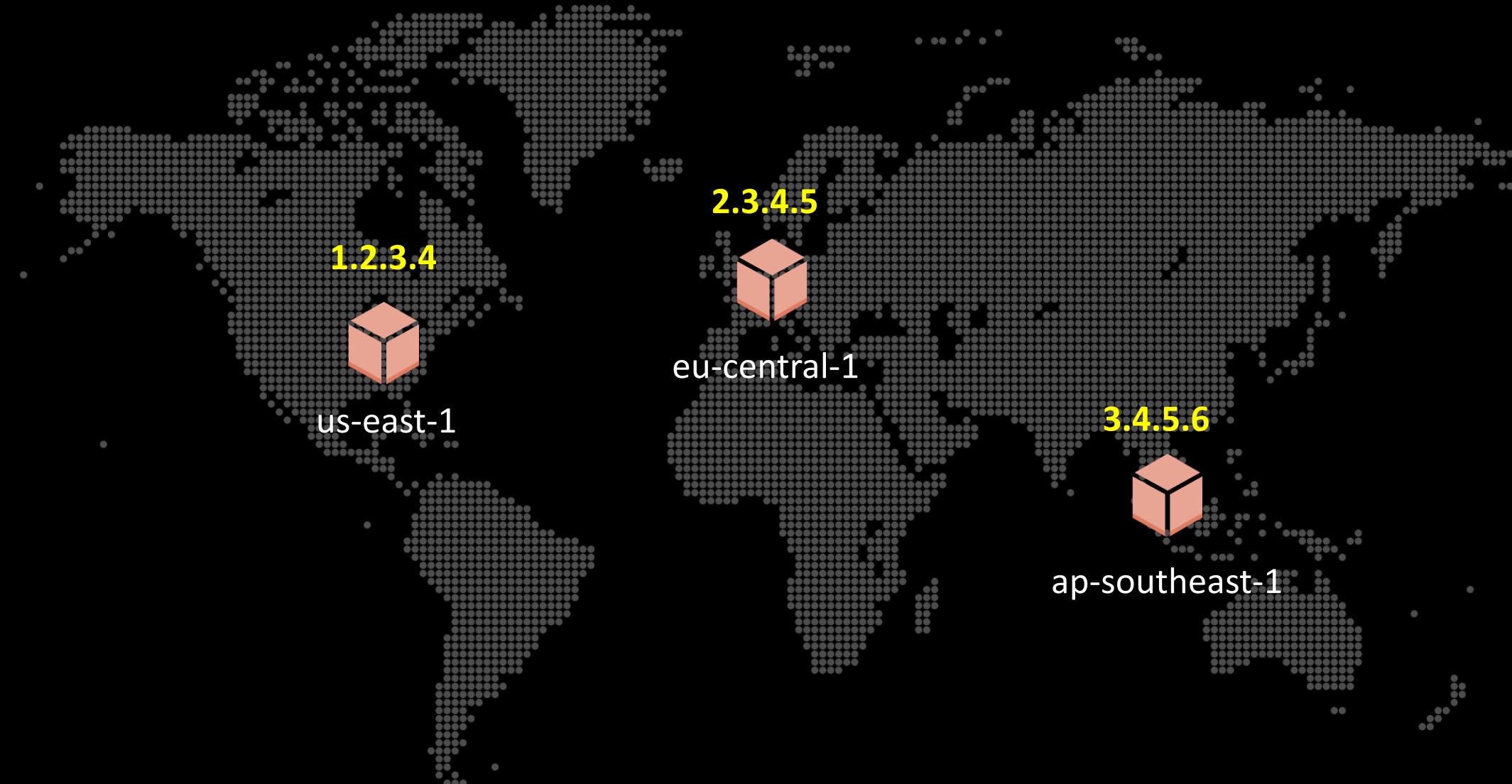


Introducing AWS Global Accelerator

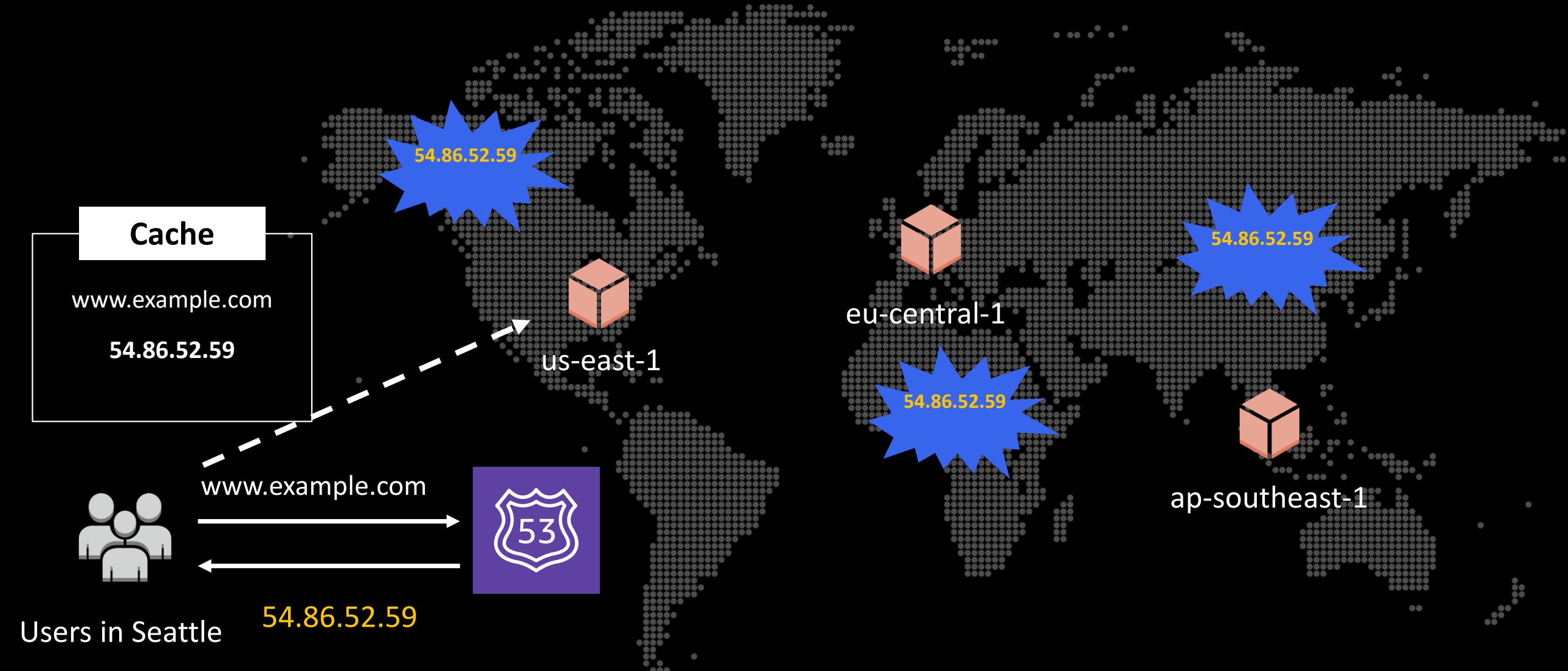
A network layer service that you can deploy in front of your internet-facing applications to improve **availability** and **performance** for your globally distributed users



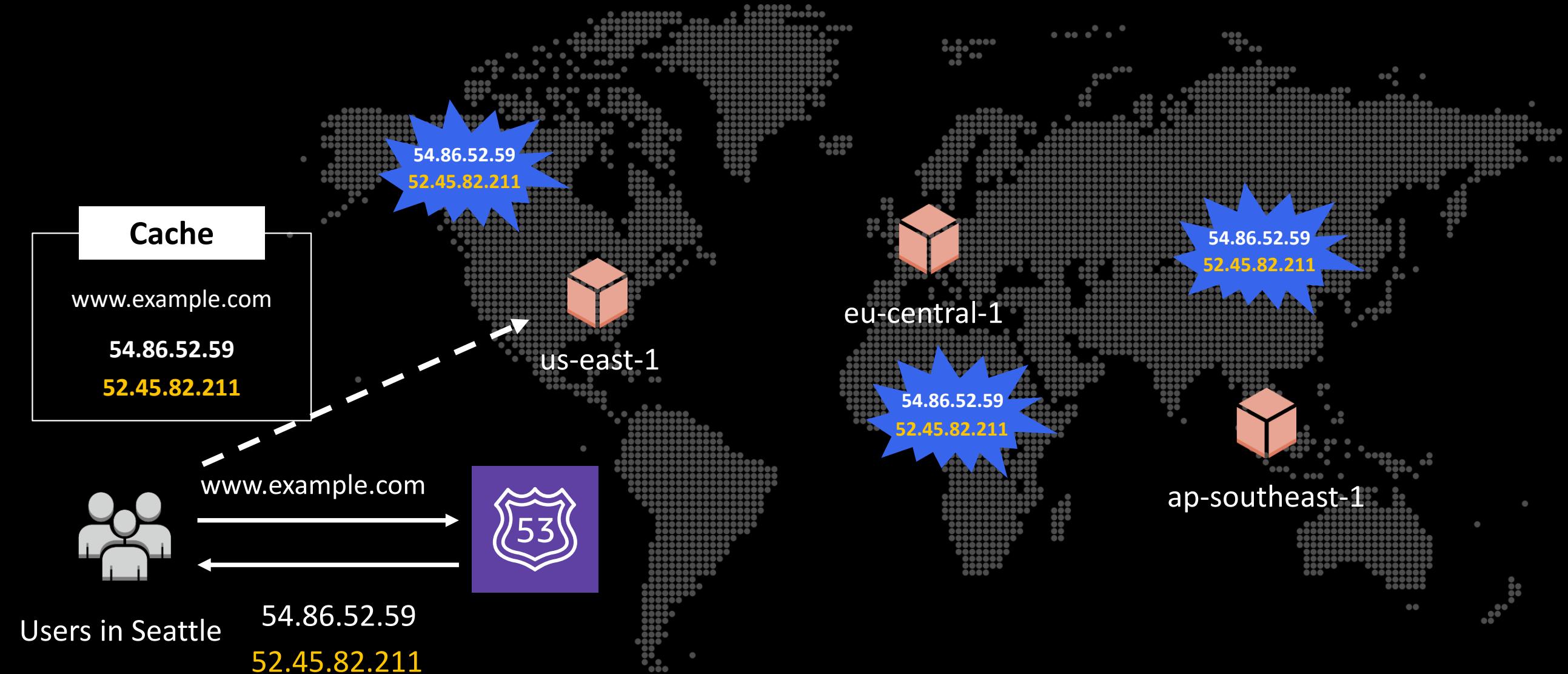
AWS Global Accelerator – How it works



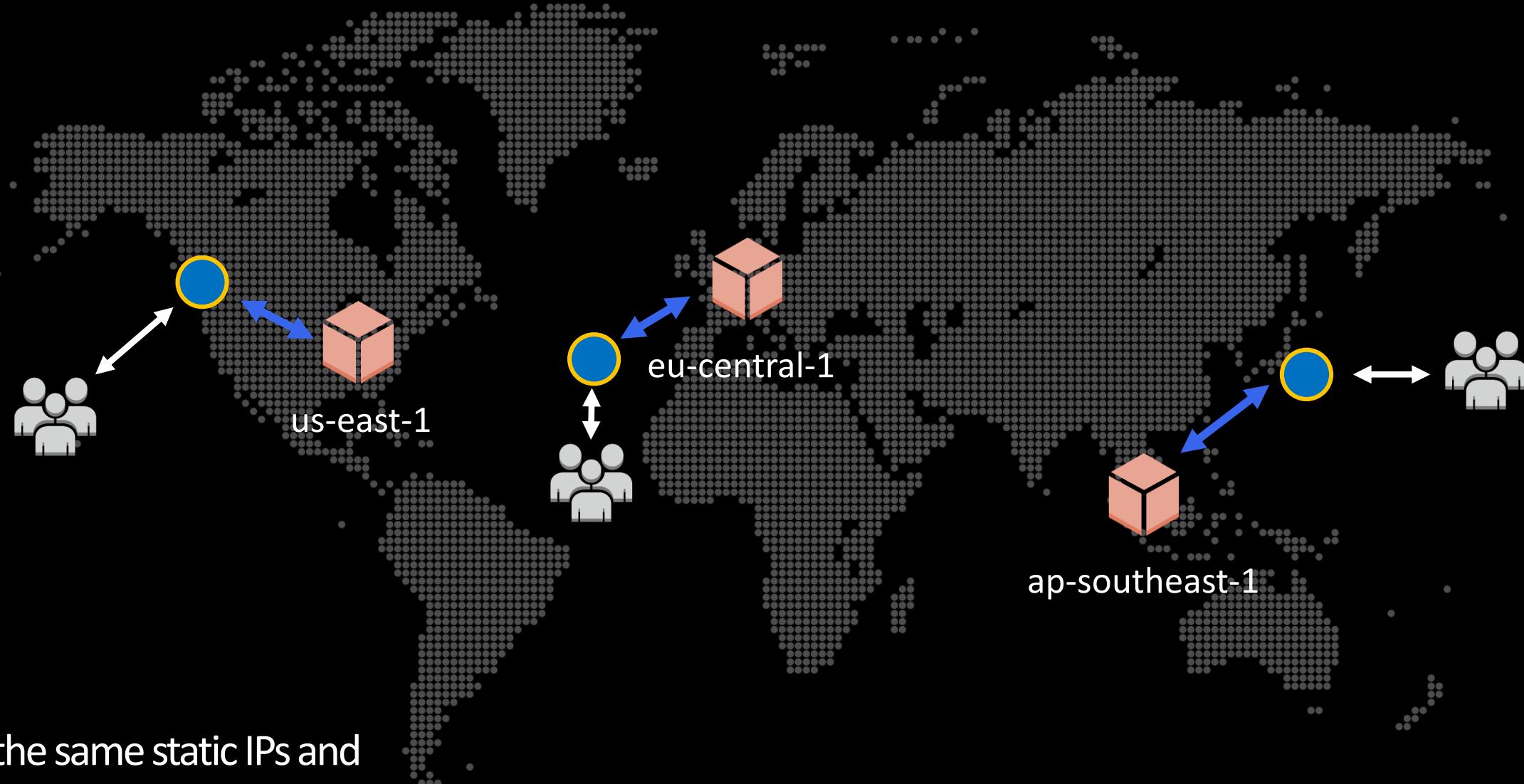
AWS Global Accelerator – How it works



AWS Global Accelerator – How it works



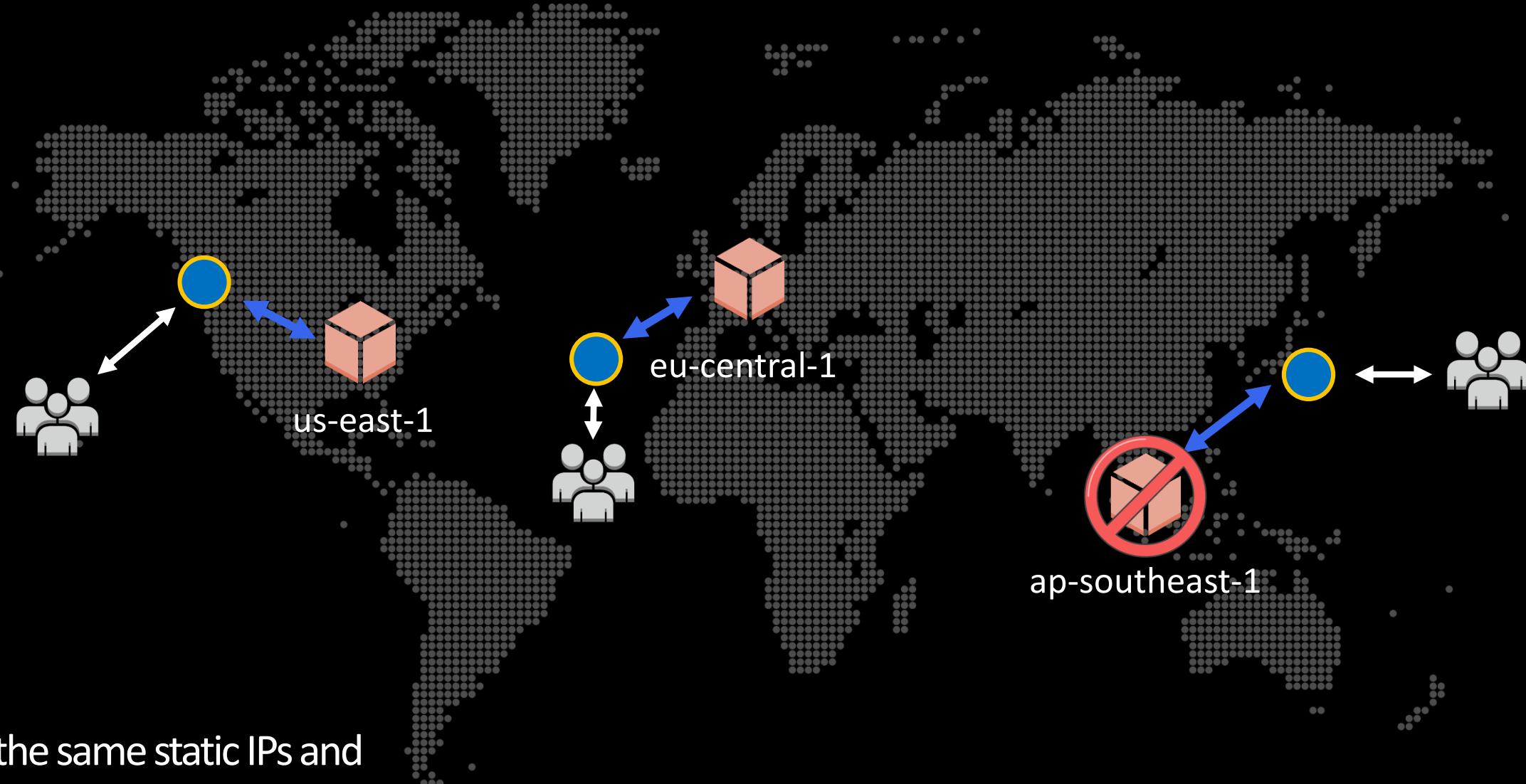
AWS Global Accelerator – How it works



All clients point to the same static IPs and
are directed to the closest PoP

● Global Accelerator endpoint with anycast IP
e.g., **54.86.52.59**

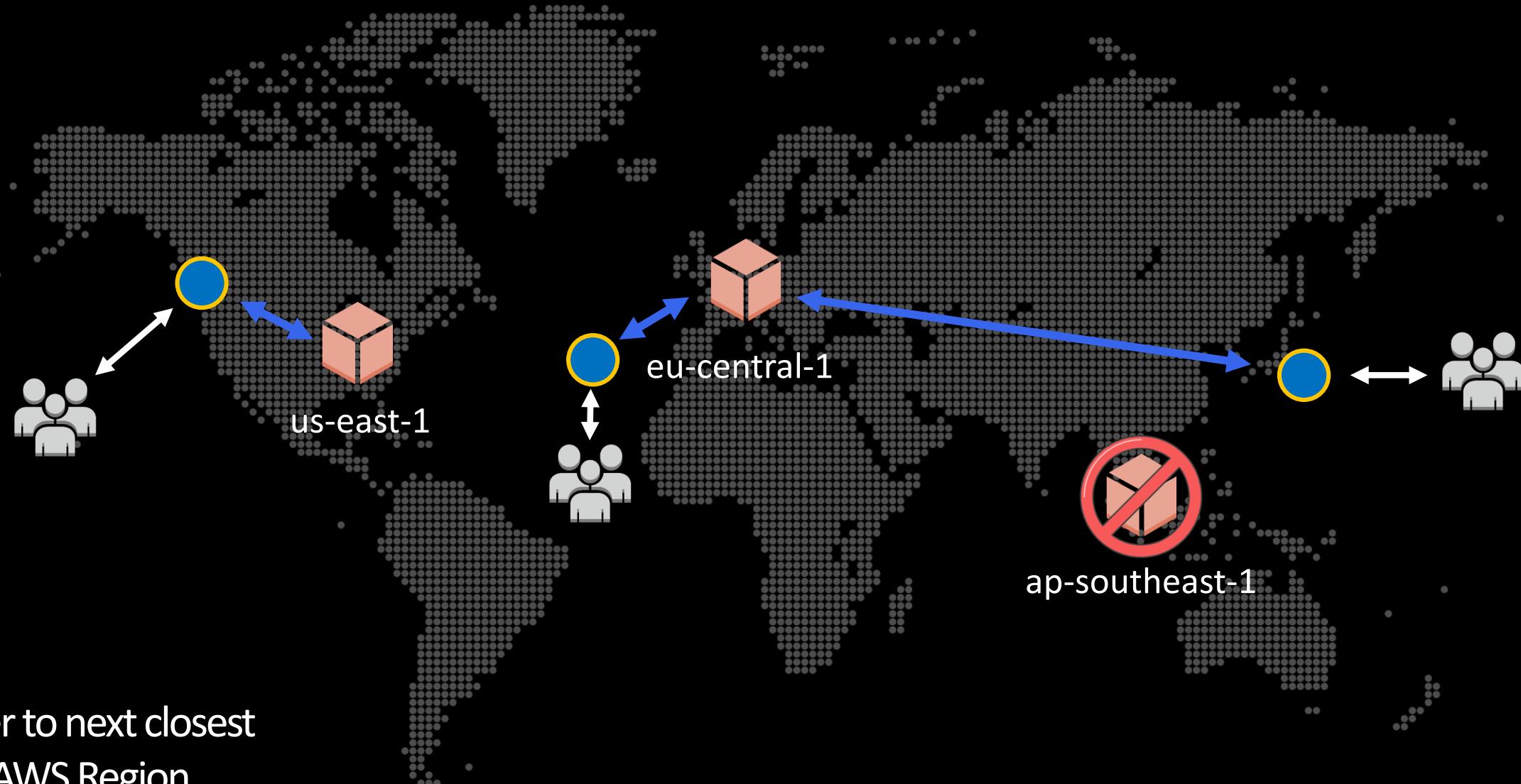
AWS Global Accelerator – How it works



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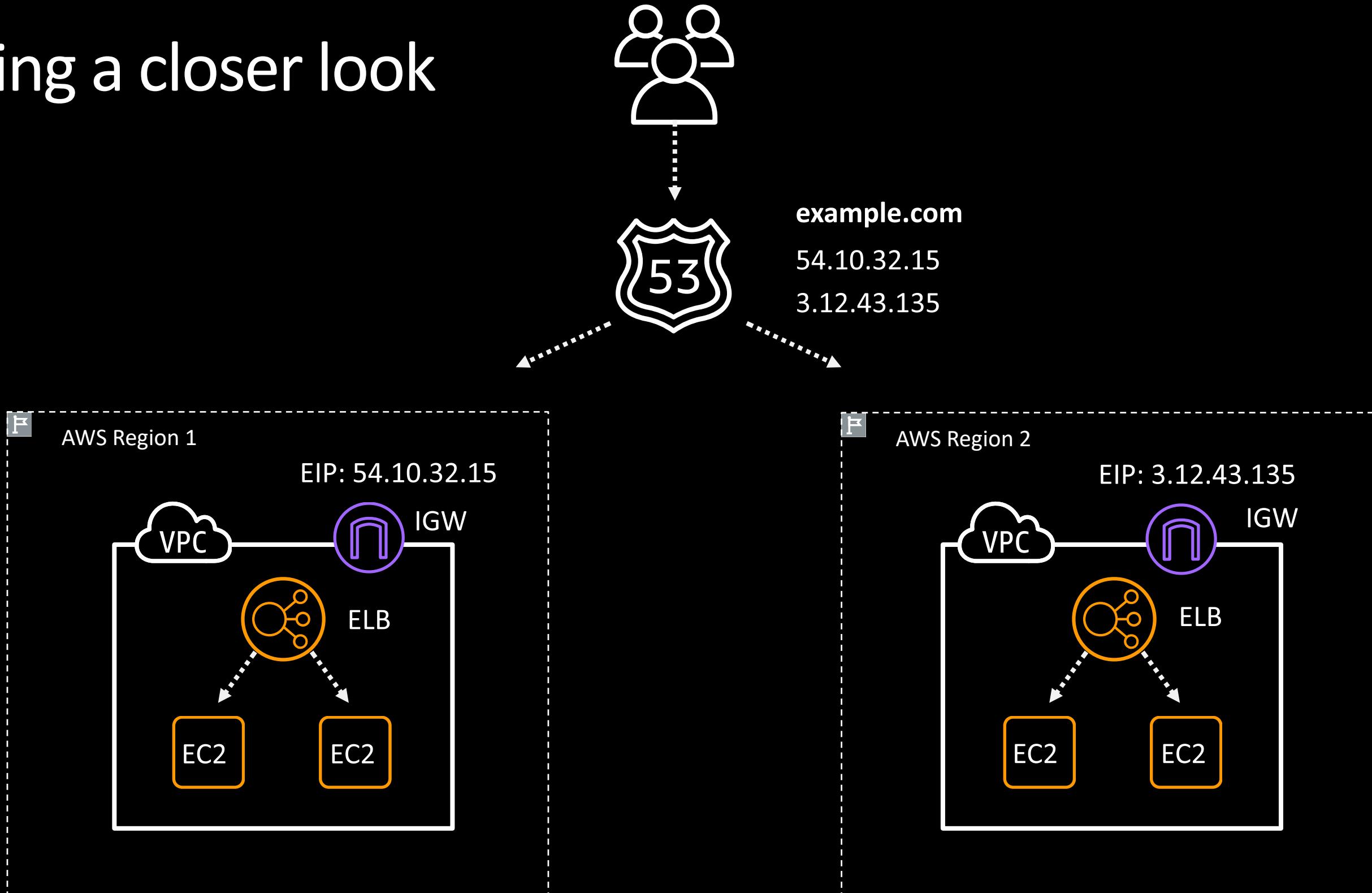
AWS Global Accelerator – How it works

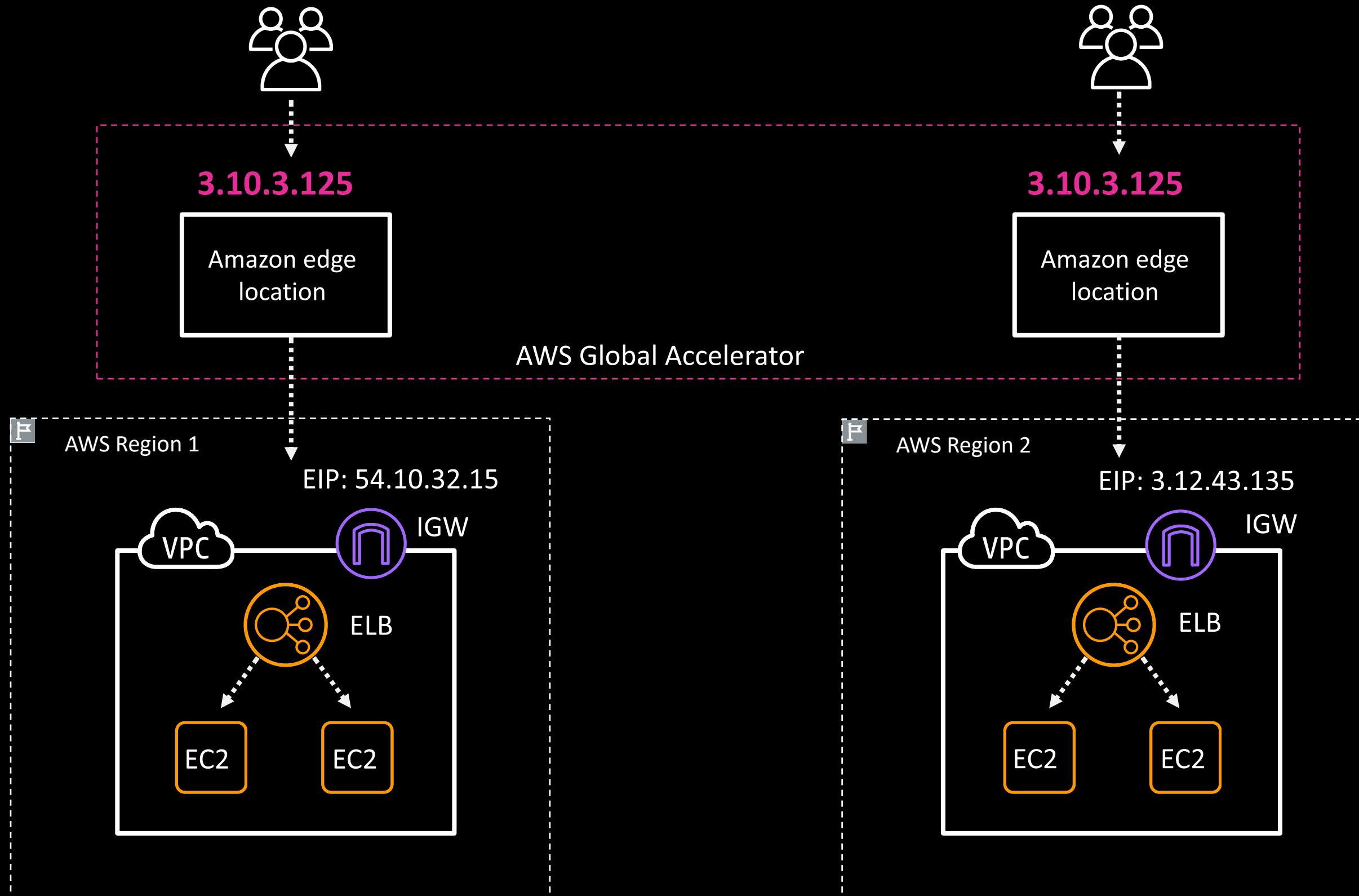


Instant failover to next closest
available AWS Region

● Global Accelerator endpoint with anycast IP
e.g., **54.86.52.59**

Taking a closer look

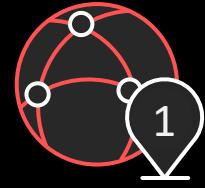




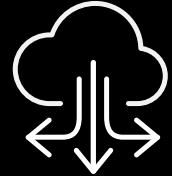
What are some of the key features?

AWS Global Accelerator

Key features



Single globally
advertised
IP address



Intelligent traffic
distribution



Target Amazon EC2
instances and Elastic
Load Balancers

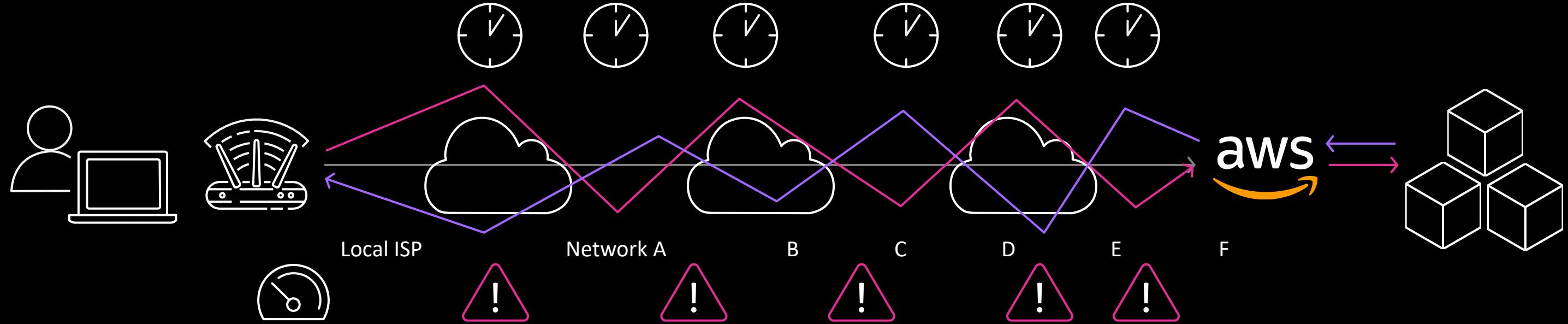


Easy to set up and
manage, with fine-
grained control

All traffic traverses the backbone*

*except within the People's Republic of China

Before Global Accelerator...



Accessing your application is not this straightforward!
It can take many networks to reach the application
Paths to and from the application may differ
Each hop impacts performance and can introduce risk

With Global Accelerator...



Traffic enters AWS global network at edge locations
Leverages the Global AWS Network
Resulting in improved performance

Choosing an endpoint...

[AWS Global Accelerator](#)

Endpoint selection



Geo-proximity

Closest regional endpoint to client location



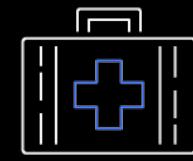
Client affinity settings

Continuously select the same endpoint or a given client



Customer-configured policies

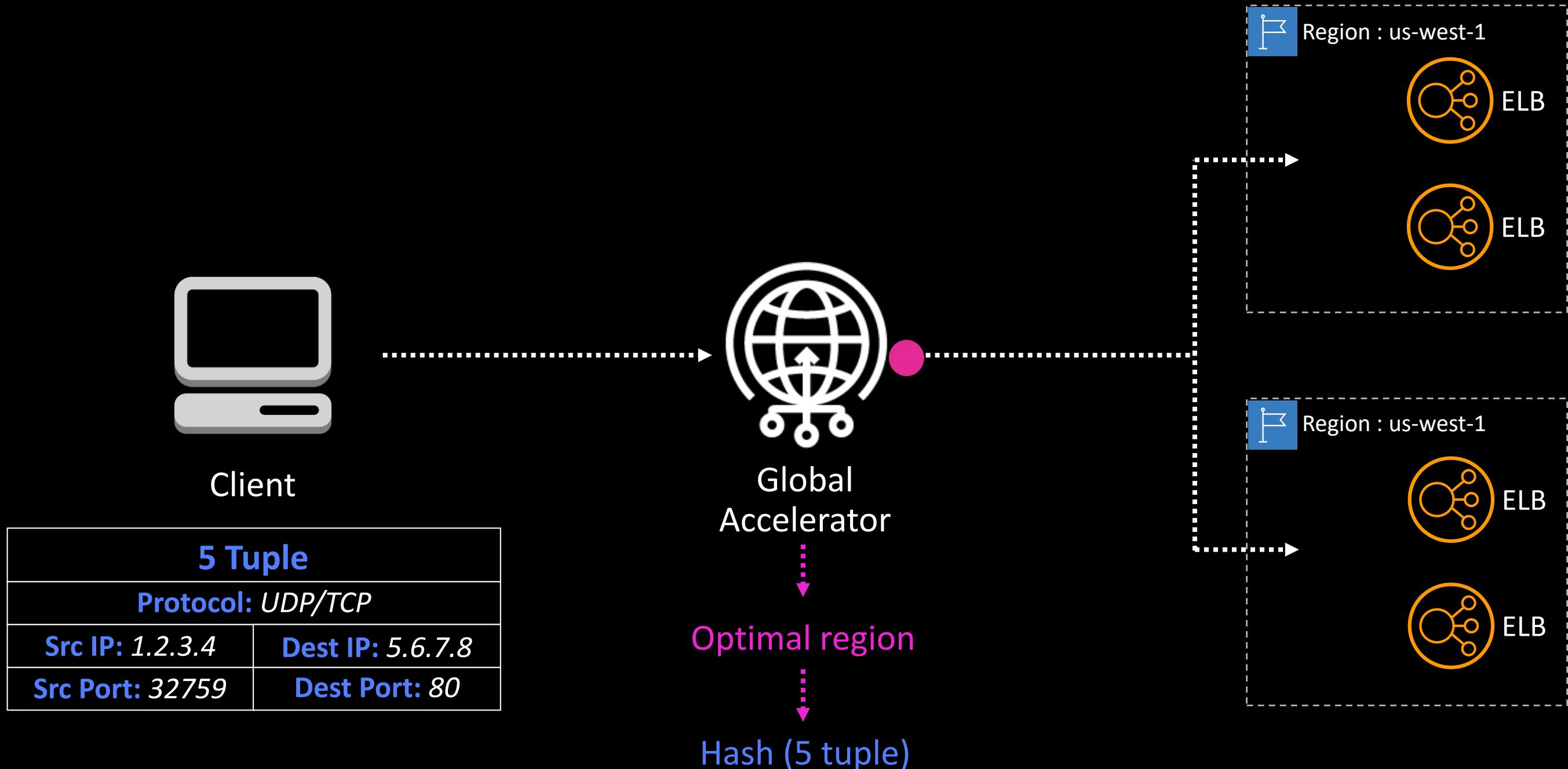
Customer-defined rules to control traffic to endpoints



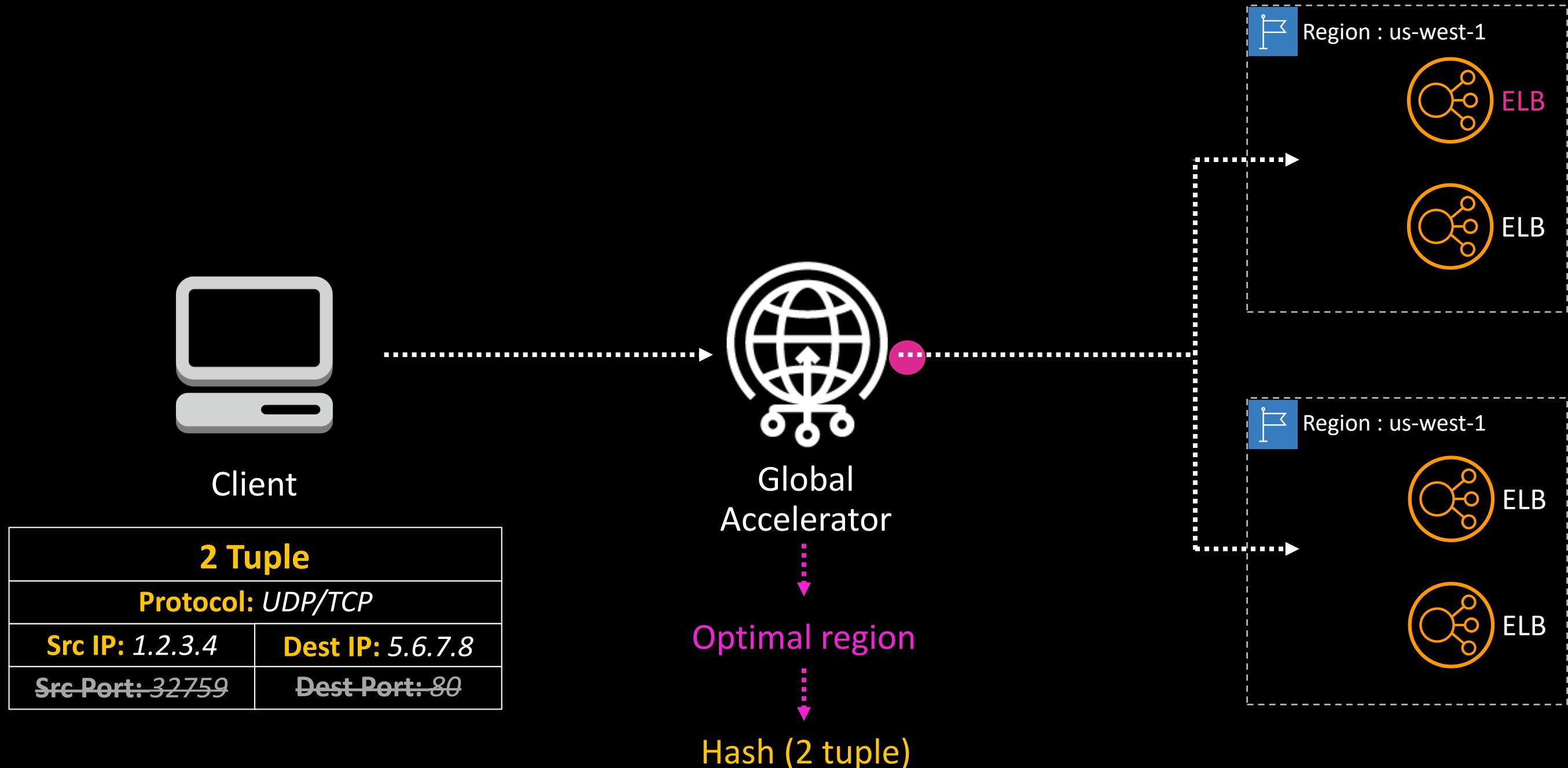
Application Health

Continuous health checks to endpoints

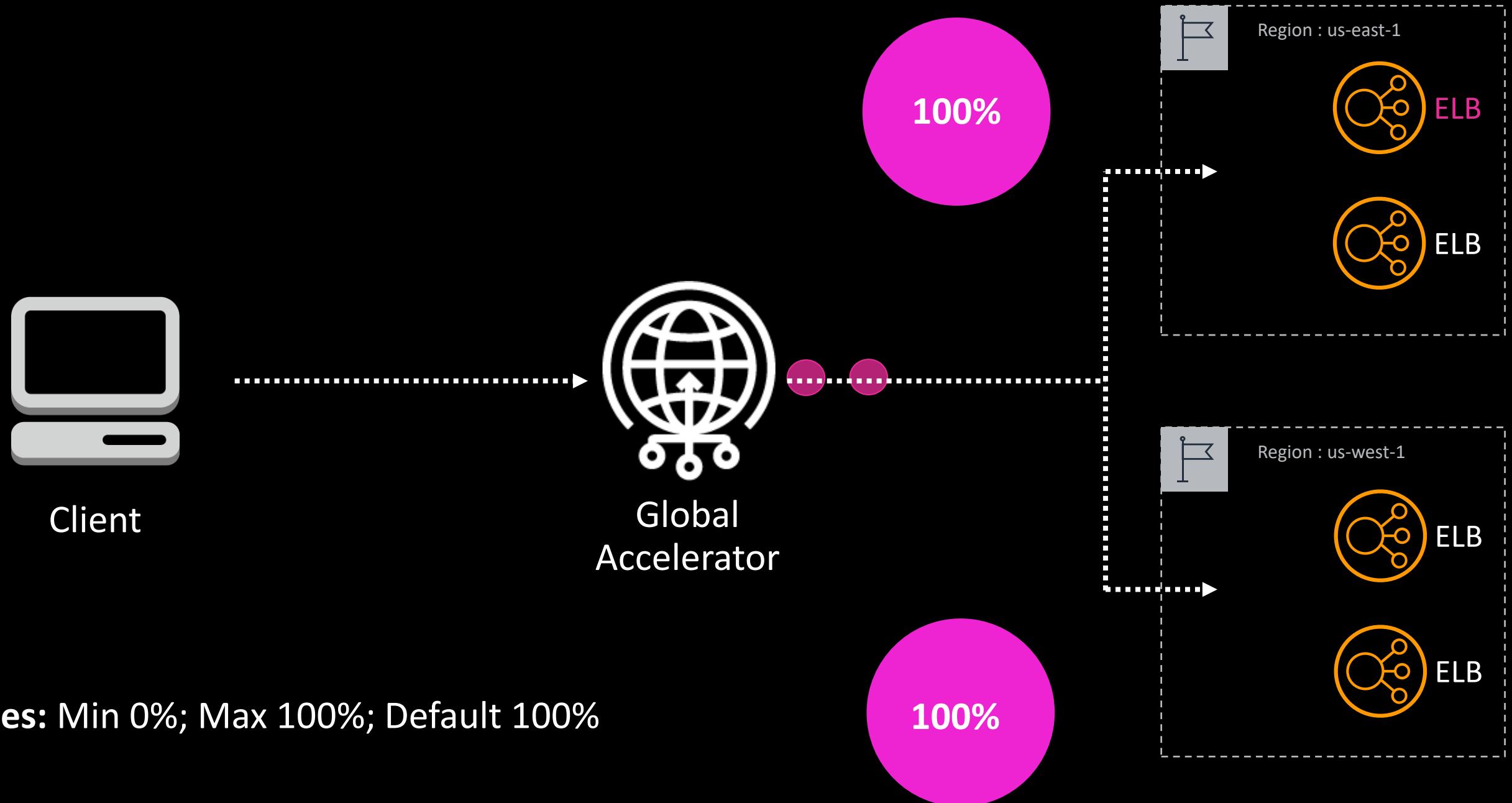
Traffic Control – Optimal endpoint selection



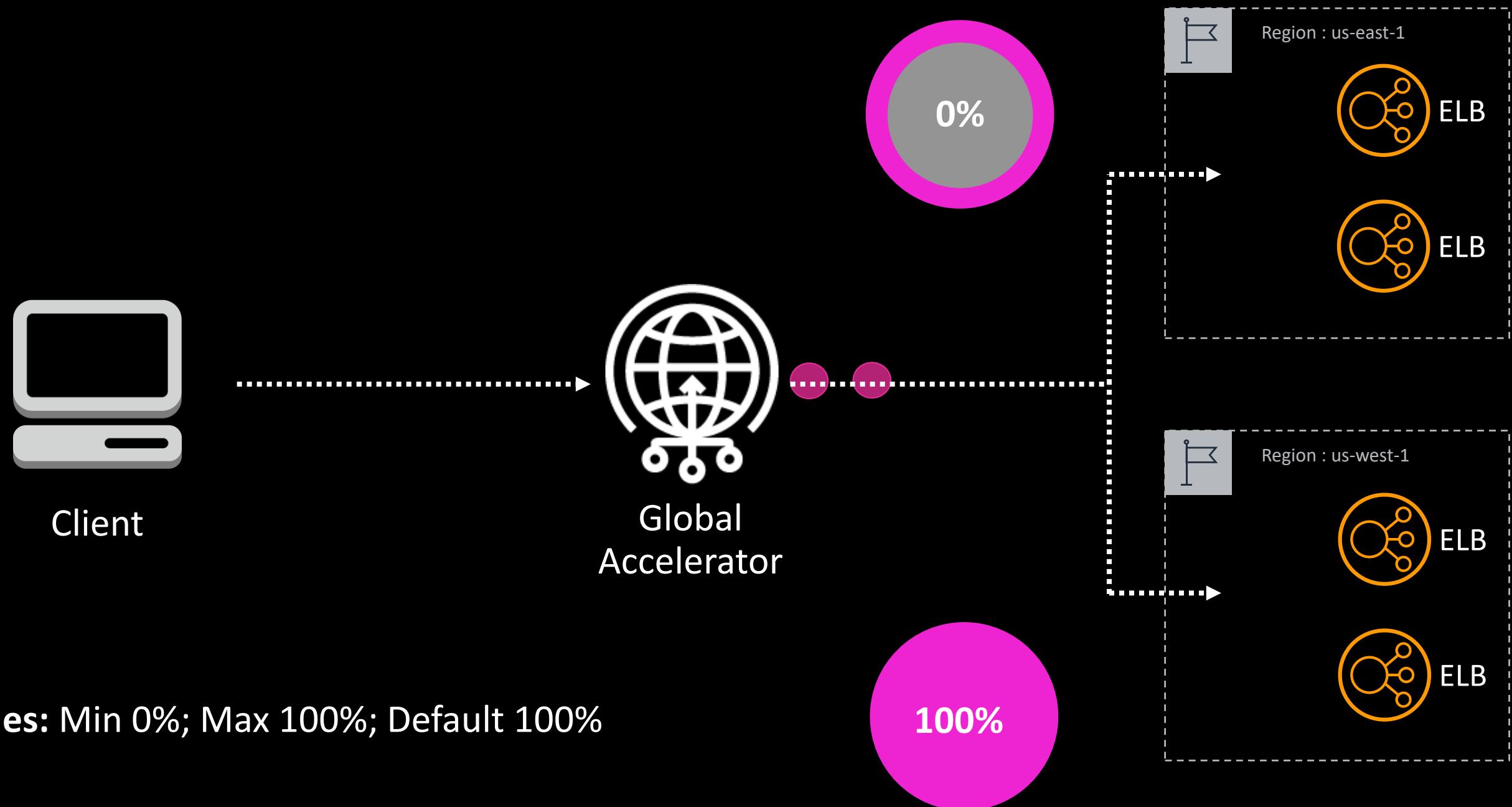
Traffic Control – Client Affinity



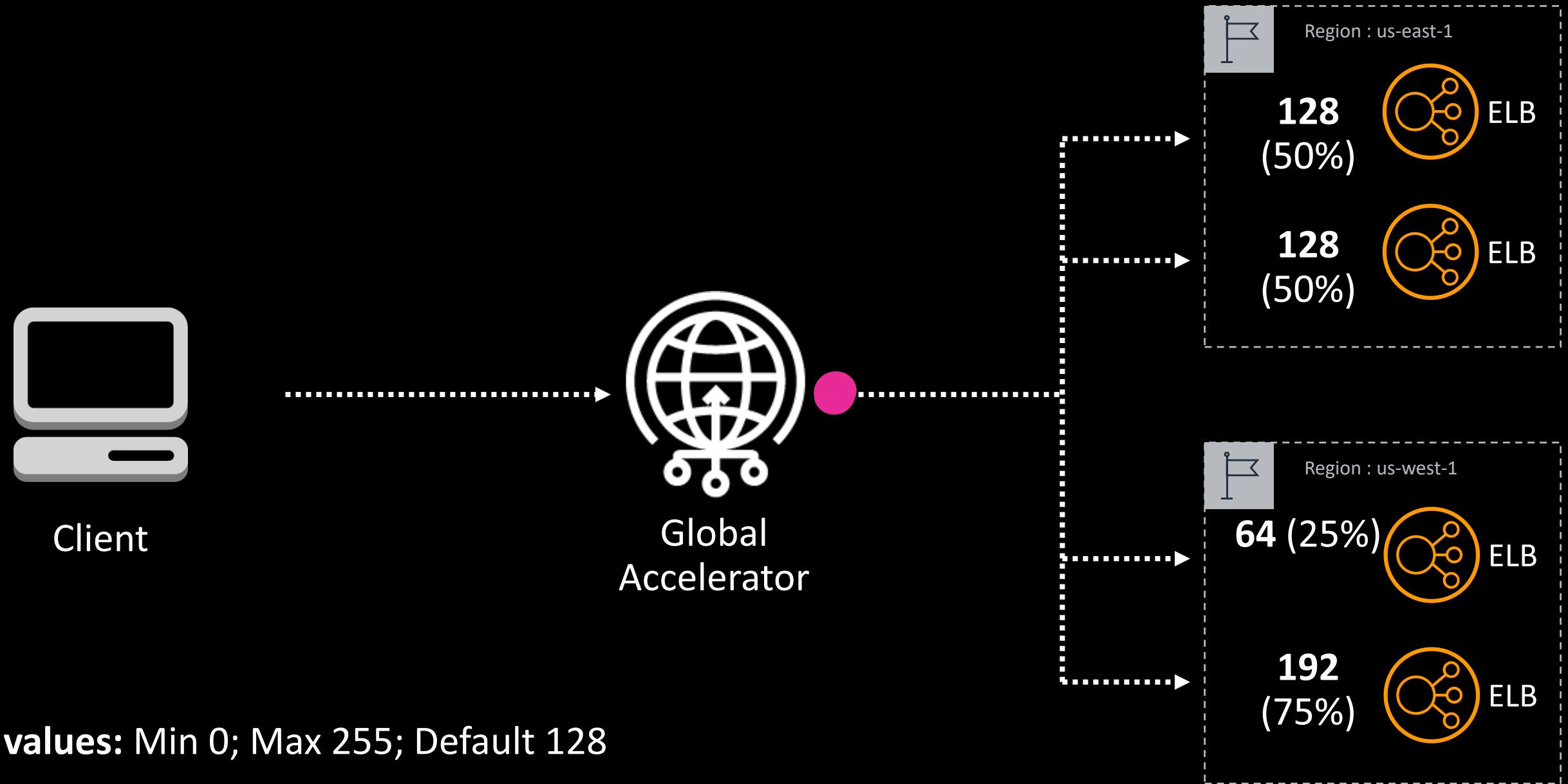
Easy Traffic Control – Regional Traffic dials



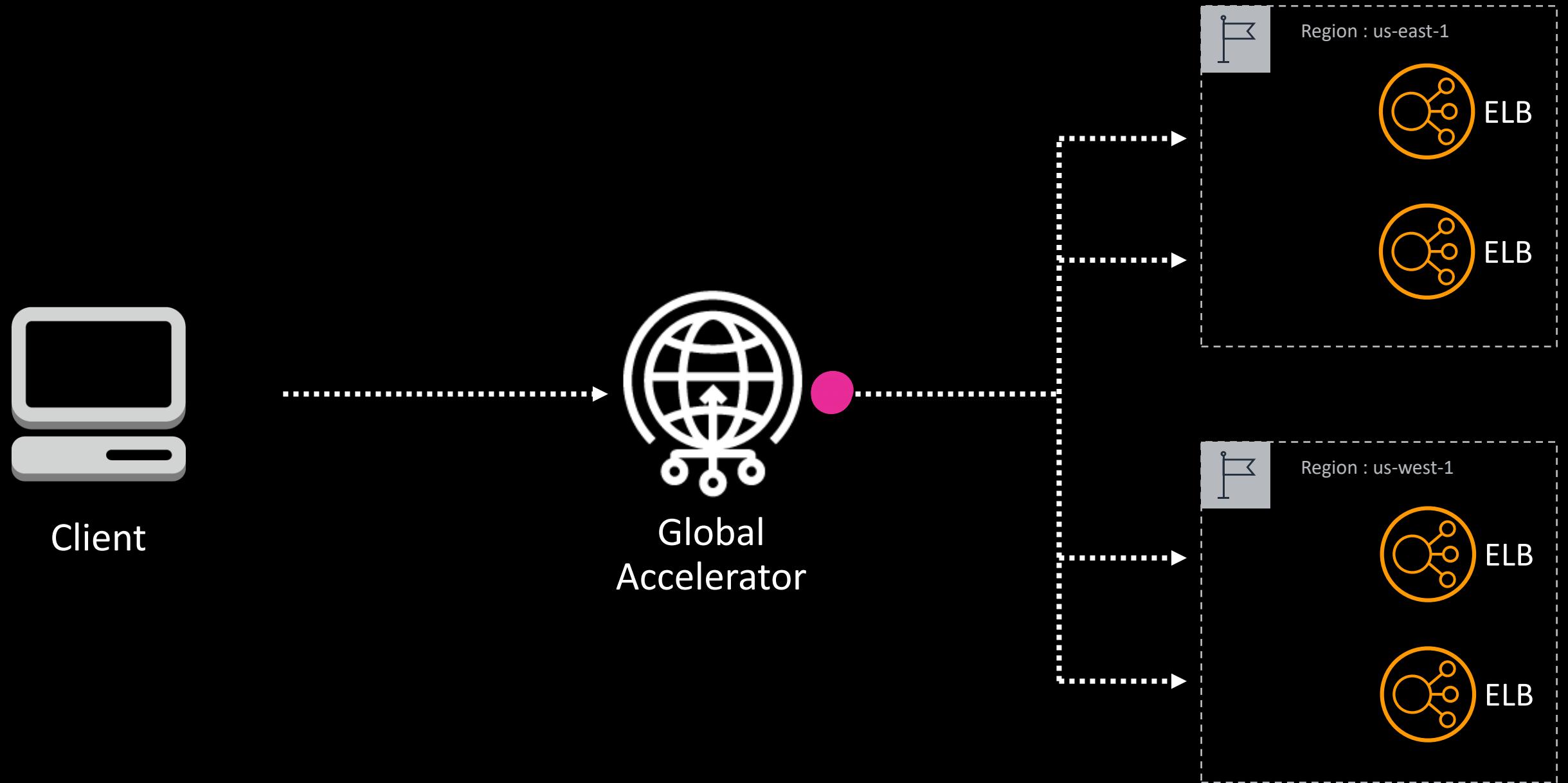
Easy Traffic Control – Regional Traffic dials



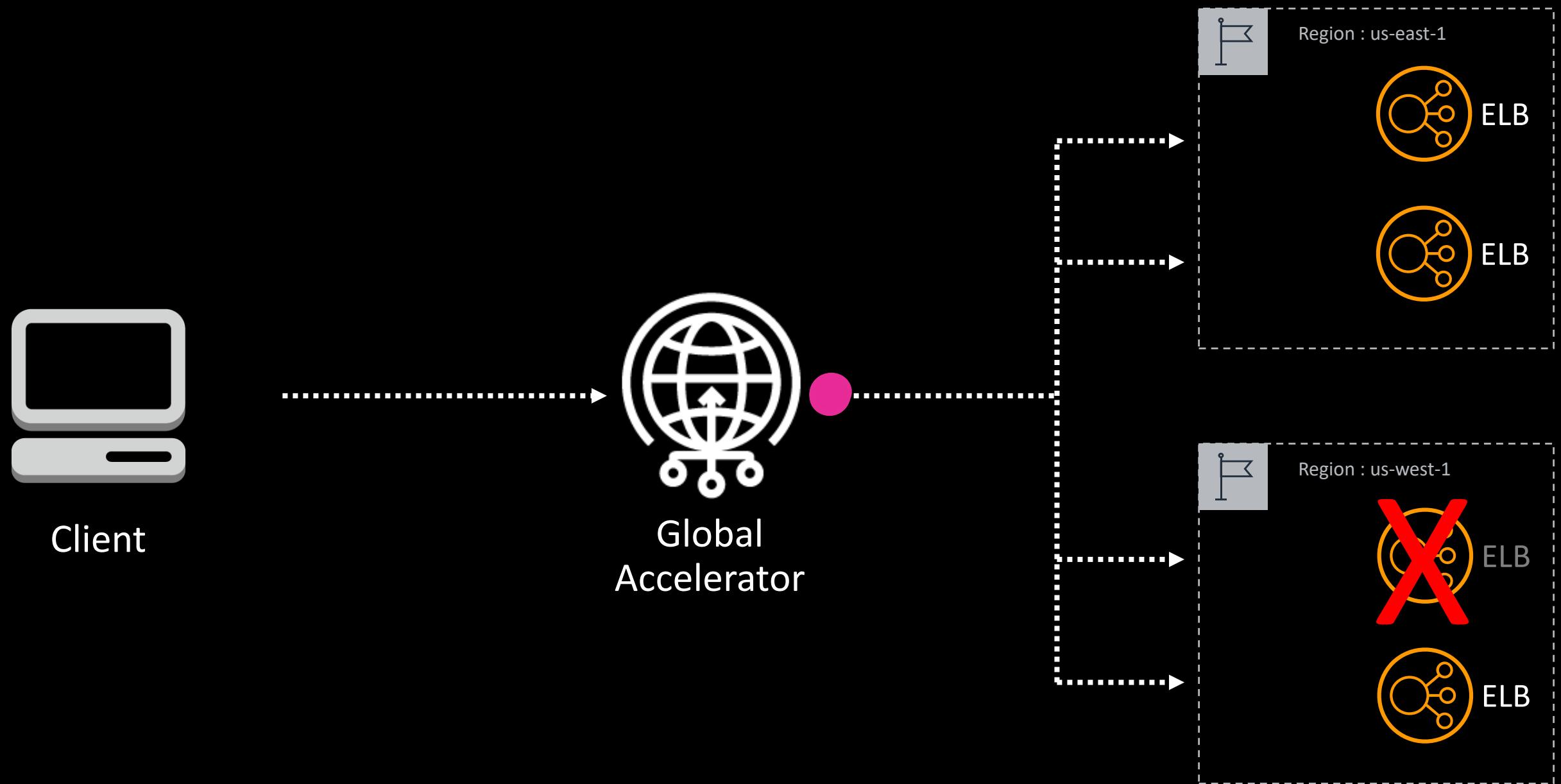
Easy traffic control – Endpoint Weights



Health Checks



Health Checks



So how do we configure AWS Global Accelerator
Ease of use....

Accelerator configuration

Accelerator IPs

Network Zone A

1.2.3.4

Network Zone B

3.4.5.6

Listeners

TCP
80,443

UDP
53

Endpoint groups

us-east-1

Endpoints: ALB 1,
ALB 2

eu-west-1

Endpoints: NLB 1,
NLB 2

Console workflow

Demo!

AWS Management Console +

https://us-west-2.console.aws.amazon.com/console/home?region=us-west-2#

Services ▼ Resource Groups ▼ 🔍

CUR_1/dssreeku-Isengard @ d... ▼ Oregon ▼ Support ▼

AWS services

Find a service by name or feature (for example, EC2, S3 or VM, storage). 🔍

Recently visited services

All services

Compute

- EC2
- Lightsail ↗
- ECS
- EKS
- Lambda
- Batch
- Elastic Beanstalk

Storage

- S3
- EFS
- S3 Glacier
- Storage Gateway

Database

- RDS
- DynamoDB
- ElastiCache
- Neptune
- Amazon Redshift

Migration

- AWS Migration Hub
- Application Discovery Service
- Database Migration Service
- Server Migration Service
- Snowball

Networking & Content Delivery

Management Tools

- CloudWatch
- AWS Auto Scaling
- CloudFormation
- CloudTrail
- Config
- OpsWorks
- Service Catalog
- Systems Manager
- Trusted Advisor
- Managed Services

Media Services

- Elastic Transcoder
- Kinesis Video Streams
- MediaConvert
- MediaLive
- MediaPackage
- MediaStore
- MediaTailor

Machine Learning

- Amazon SageMaker
- Amazon Comprehend
- AWS DeepLens
- Amazon Lex
- Machine Learning
- Amazon Polly
- Rekognition
- Amazon Transcribe
- Amazon Translate

AWS Cost Management

- AWS Cost Explorer
- AWS Budgets

Mobile Services

- Mobile Hub
- AWS AppSync
- Device Farm

AR & VR

- Amazon Sumerian

Application Integration

- Step Functions
- Amazon MQ
- Simple Notification Service
- Simple Queue Service
- SWF

Customer Engagement

- Amazon Connect
- Pinpoint
- Simple Email Service

Business Productivity

- Alexa for Business
- Amazon Chime ↗
- WorkDocs
- WorkMail

Helpful tips

 [Manage your costs](#)
Monitor your AWS costs, usage, and reservations using AWS Budgets. [Start now](#)

 [Create an organization](#)
Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#)

Explore AWS

Machine Learning with Amazon SageMaker
The fastest way to build, train, and deploy machine learning models. [Learn more.](#)

Amazon Relational Database Service (RDS)
RDS manages and scales your database for you. RDS supports Aurora, MySQL, PostgreSQL, MariaDB, Oracle, and SQL Server. [Learn more.](#)

AWS Fargate Runs Containers for You
AWS Fargate works with Amazon ECS to run and scale your containers for you. Pay only for the compute resources you need, scale quickly, and run any size application. [Learn more.](#)

AWS Marketplace
Find, buy, and deploy popular software products that run on AWS. [Learn more.](#)

Have feedback?

Intelligent routing demo

[Another demo!](#)

EC2 Management Console x www.mytravelogue.org x + https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#GlobalAcceleratorDashboard:

Services Resource Groups ⚡ CUR_1/dssreeku-Isengard @ d... Oregon Support

AWS Global Accelerator > Accelerators

Access AWS Global Accelerator from any AWS Region

Accelerators (4)

Find accelerators

Name	Static IP addresses	Enabled	Status	Created	Edited
Divya-Accelerator	13.248.130.96, 76.223.2.78	On	Deployed	Monday, November 19, 2018 5:55 AM GMT	Monday, November 19, 2018 6:29 PM GMT

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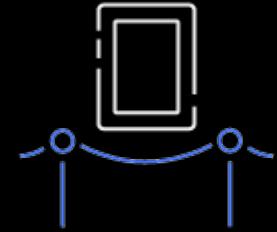
View details Edit Delete Create accelerator

Feedback English (US) © 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

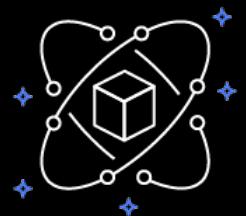
How to architect for high availability

AWS Global Accelerator

Strengthen your availability posture



Network Zones



Continuous
health checks

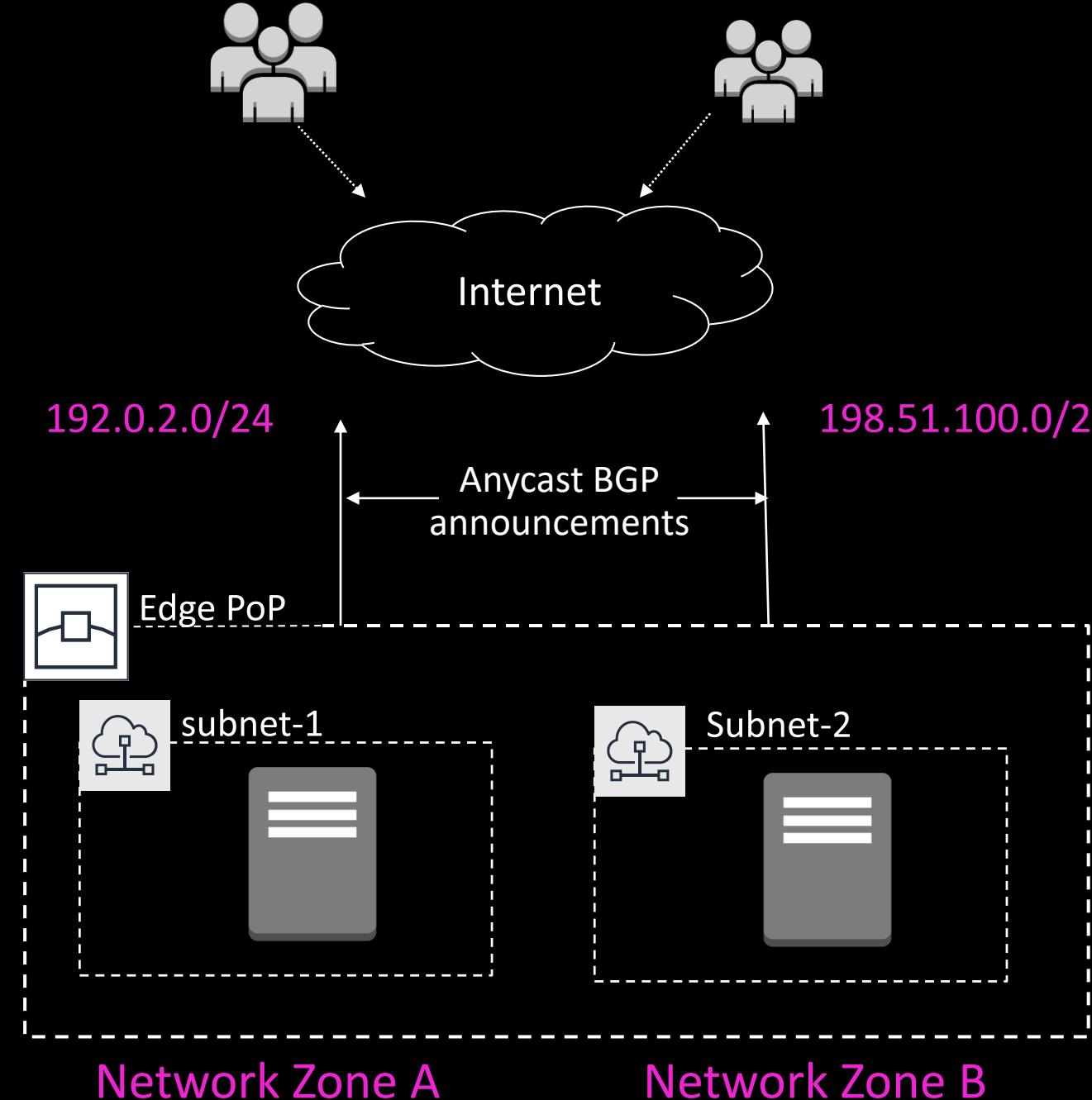


DDoS protection at
edge

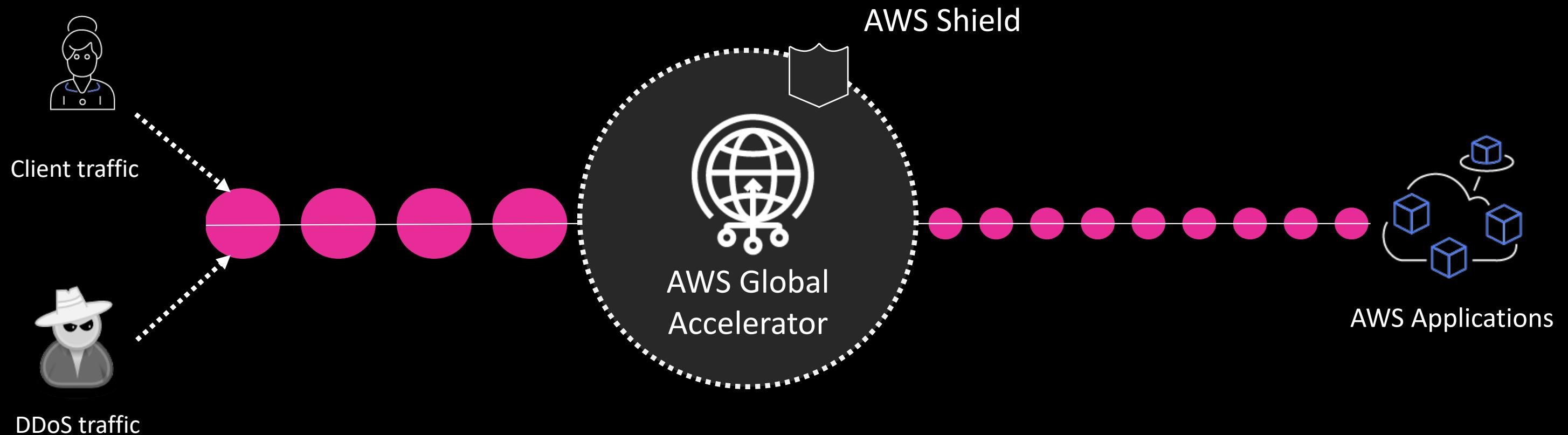


AWS global
network

Global Accelerator – Fault-isolating design



DDoS protection at edge



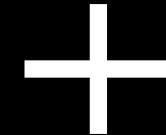
Pricing

\$\$\$

AWS Global Accelerator – Pricing

Fixed Fee

\$0.025 for every hour or partial hour
that your acceleration runs



Data Transfer – Premium

Fixed fee per GB of data transferred in the
dominant direction per source-destination
pair

		Destination (AWS edge locations)					
		US & Canada	Europe	Asia Pacific	South Korea	India	Australia
Source (AWS Regions)	US & Canada	\$0.015	\$0.015	\$0.035	\$0.035	\$0.035	\$0.105
	Europe	\$0.015	\$0.015	\$0.043	\$0.035	\$0.033	\$0.105
	Asia Pacific	\$0.012	\$0.043	\$0.010	\$0.058	\$0.032	\$0.080
	South Korea	\$0.017	\$0.020	\$0.043	\$0.043	\$0.067	\$0.080
	India	\$0.025	\$0.023	\$0.023	\$0.072	\$0.023	\$0.094
	Australia	\$0.070	\$0.070	\$0.074	\$0.091	\$0.101	\$0.007

The DT-Premium fee is in addition to the standard EC2 Data Transfer Out fees

Why would I use AWS Global Accelerator?

Use Cases – When to use Global Accelerator

IP whitelisting

- Automotive / Connected vehicles
- Retail / Payments transactions
- Healthcare
- IOT

UDP Traffic

- Gaming
- Telco – Voice over IP (VoIP)
- Telco – DNS

Live Video ingest

- Media

Use Cases – When to use Global Accelerator

Multi-region applications

- Financial Services
- DR / Failover for applications

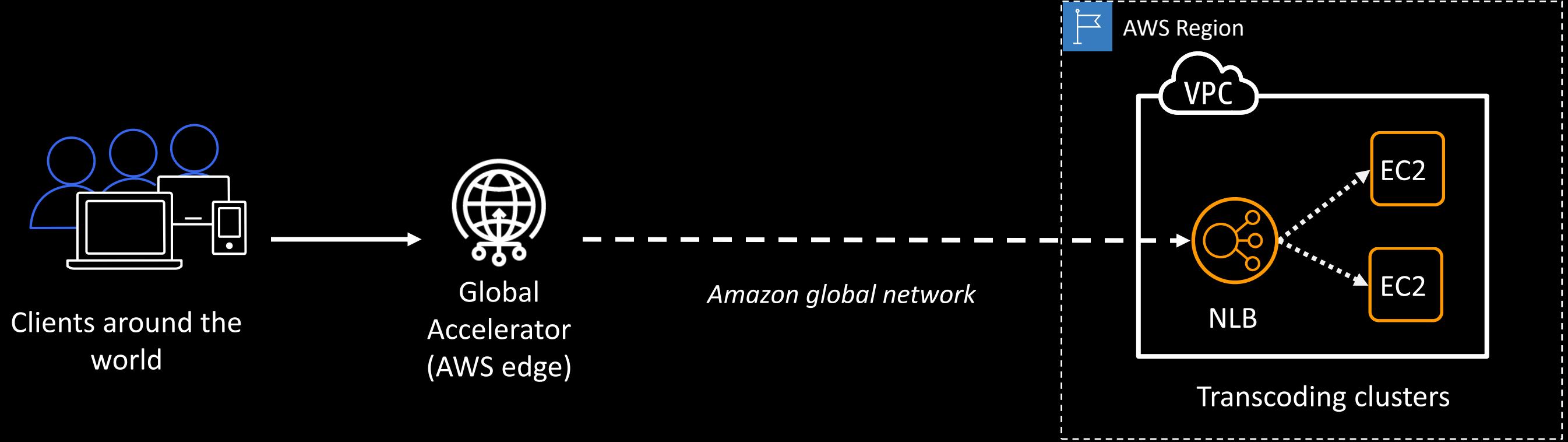
API Acceleration

- Media
- Ad-tech

Strong value proposition for critical and latency-sensitive internet-facing use cases

Who is using AWS Global Accelerator today?

Use Case: Live Video Ingest

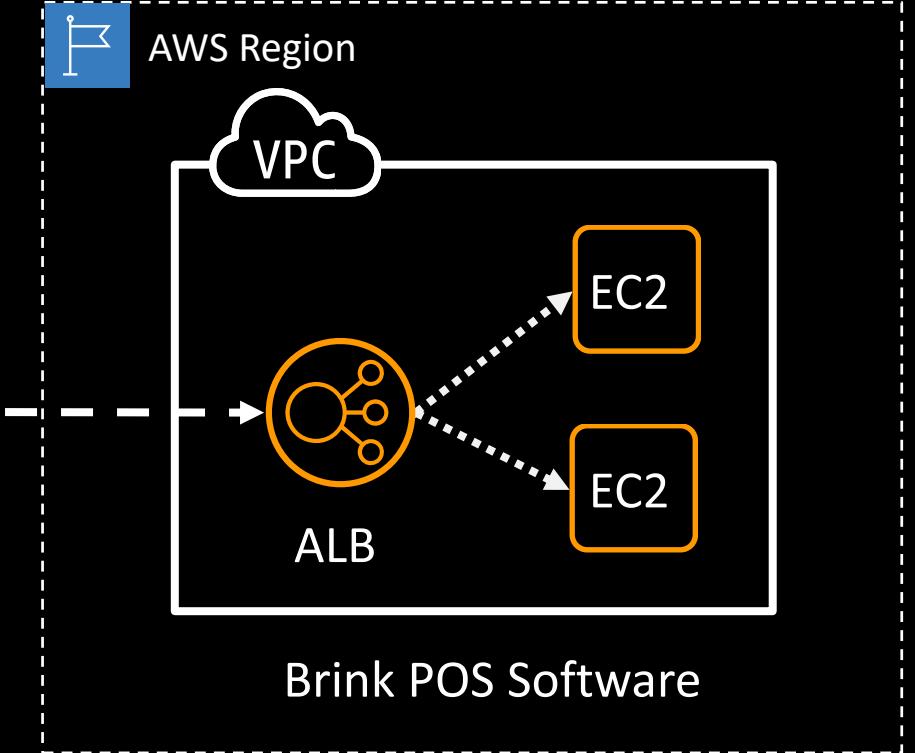
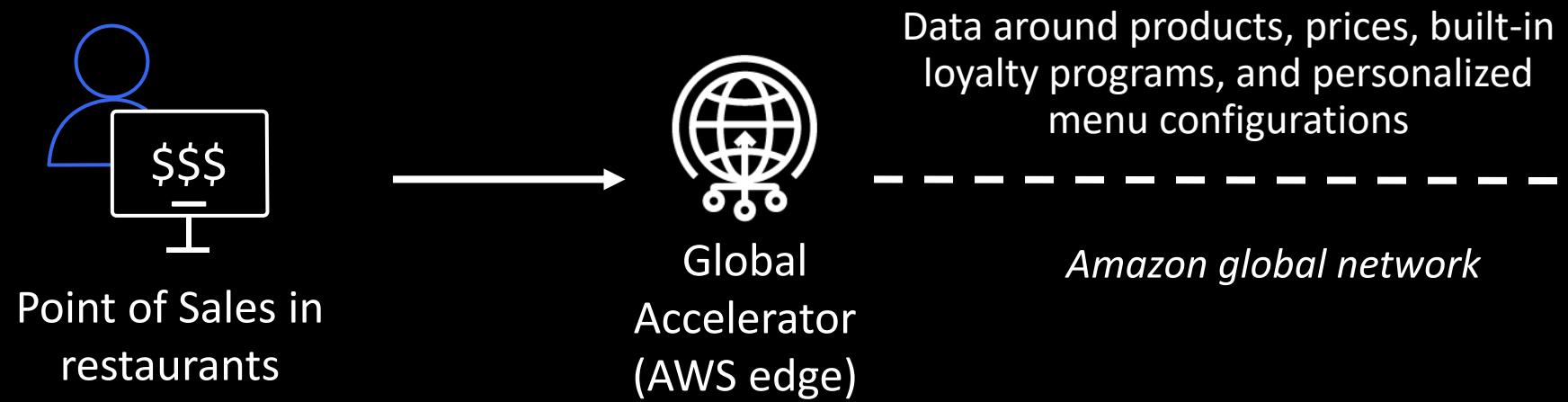


“Our video platform is hosted on AWS and uses Global Accelerator to improve the performance and availability of video ingest for our users all around the world”

—Erik Viklund, VP Dev Ops, Flowplayer



Use Case: IP whitelisting + API acceleration

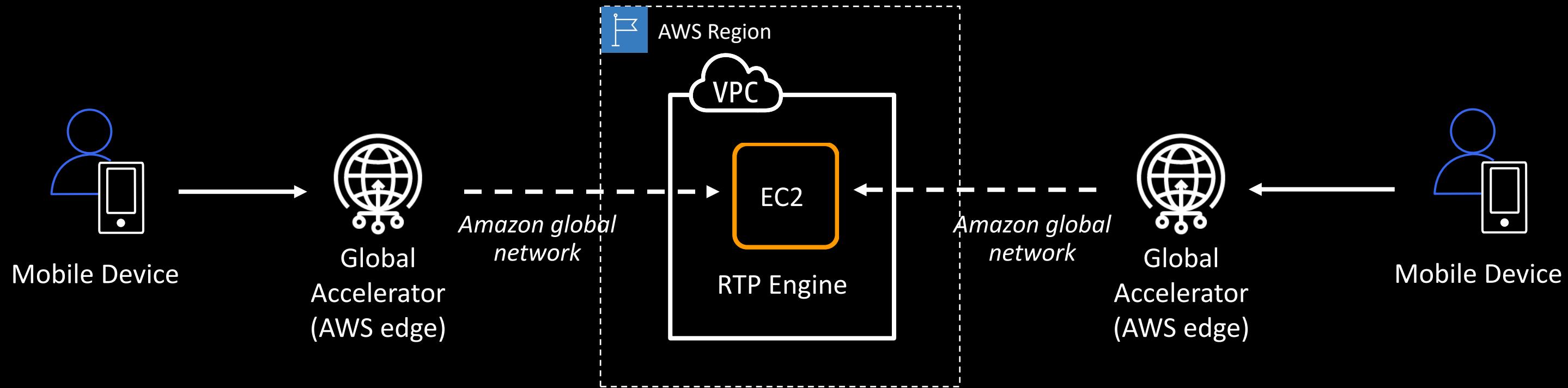


“All our Points of Sale use AWS Global Accelerator to reach our applications running on AWS with high availability and low latency”

—Leonard Redles, System Architect, ParTech, Inc.



Use Case: Voice over IP



"We leverage AWS Global Accelerator's static anycast IPs and global network to handle Voice over IP (VoIP) traffic, thus ensuring that our customers get the best quality of service"

—Marcin Kowalczyk, AWS Architect, CrazyCall

CrazyCall

What this means for you...

AWS Global Accelerator

- Helps create a more robust architecture
- Increases network stability
- Provides automatic health checking and routing

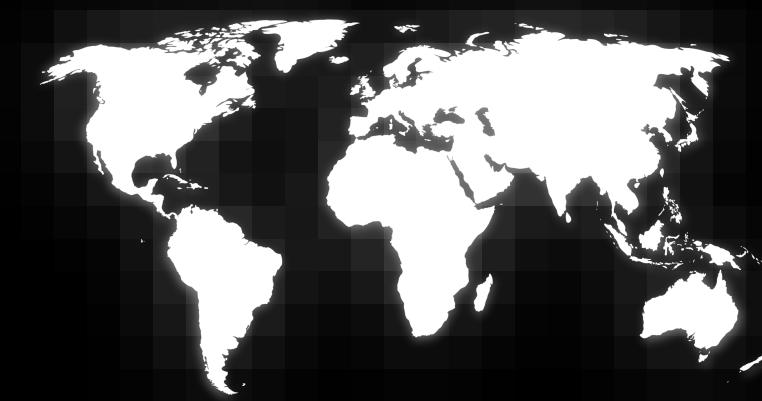
Anycast IP



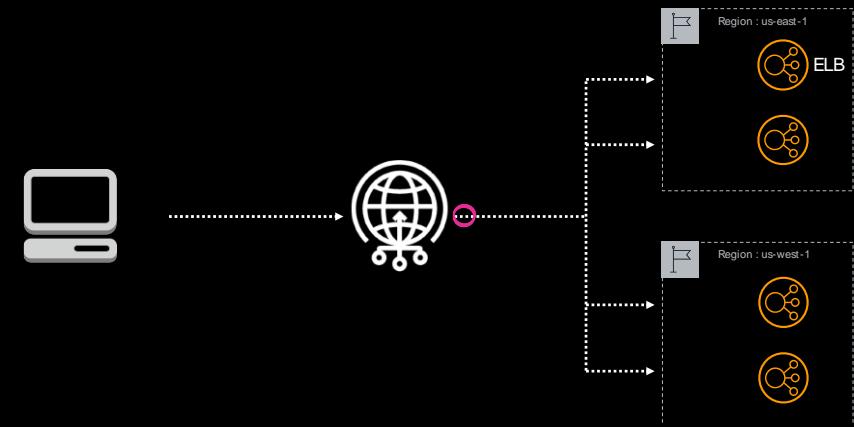
www.example.com

1.1.1.1

AWS Global Backbone



Health checks and traffic control



Thank you!

Matt Lehwess
mattyloo@amazon.com