

Delivering Content on AWS with Amazon CloudFront

EXTENDING CLOUDFRONT



Andy Dyrucz

CLOUD ARCHITECT

@adyrucz

Summary

Summary

Summary

Error Handling

Summary

Error Handling

Restricting Access

Summary

Error Handling

Restricting Access

- Geolocation

Summary

Error Handling

Restricting Access

- Geolocation
- **Signed URLs**

Summary

Error Handling

Restricting Access

- Geolocation
- Signed URLs
- Origin Access Identity**

Summary

Error Handling

Restricting Access

- Geolocation
- Signed URLs
- Origin Access Identity
- WAF

Summary

Error Handling

Restricting Access

- Geolocation
- Signed URLs
- Origin Access Identity
- WAF
- Field-Level Encryption**

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Error Handling

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- Geolocation
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Error Handling

Restricting Access

- Geolocation
- Signed URLs
- Origin Access Identity
- WAF
- Field-Level Encryption

Lambda@Edge

CloudFront Error Handling



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CloudFront 404 Error

Not Found: The requested URL /myfilename.html was not found on this server.

AWS CloudFront Management X +

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E ... ⌂ ⌁ ⌂ ⌃

Distributions Services Resource Groups ⌂ durst Global Support ?

CloudFront Distributions > ES6J41BR5J5GT

General Origins and Origin Groups Behaviors Error Pages Restrictions Invalidations Tags

You can configure CloudFront to respond to requests using a custom error page when your origin returns an HTTP 4xx or 5xx status code. For example, when your custom origin is unavailable and returning 5xx responses, CloudFront can return a static error page that is hosted on Amazon S3. You can also specify a minimum TTL to control how long CloudFront caches errors. For more information, see [Customizing Error Responses](#) in the *Amazon CloudFront Developer Guide*.

Create Custom Error Response Edit Delete

Viewing 1 to 1 of 1 Items

	HTTP Error Code	Error Caching Minimum TTL	Response Page Path	HTTP Response Code	
<input type="checkbox"/>	404	300	/errors/404.html	200	

Viewing 1 to 1 of 1 Items

Distributions What's New Reports & Analytics Cache Statistics Monitoring and Alarms Popular Objects Top Referrers Usage Viewers Security Origin Access Identity Public key Field-level encryption



Home About Speakers Schedule Venue Hotels Gallery Sponsors Contact

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Sorry, the page you requested does not exist!

Head back to the homepage.

CloudFront Errors



Client Errors



Server Errors



Client Errors

problem with the request



Server Errors

problem with the origin server

CloudFront Custom Errors

4xx | **5xx**



CloudFront Custom Errors

4xx | **5xx**

400 | Bad Request

CloudFront Custom Errors

4xx

400 | Bad Request

403 | Forbidden

5xx

CloudFront Custom Errors

4xx

400 | Bad Request

403 | Forbidden

404 | Not Found

5xx

CloudFront Custom Errors

4xx

5xx

400 | Bad Request

403 | Forbidden

404 | Not Found

405 | Method Not Allowed

CloudFront Custom Errors

4xx

5xx

400 | Bad Request

403 | Forbidden

404 | Not Found

405 | Method Not Allowed

414 | URI Too Long

CloudFront Custom Errors

4xx

5xx

400 | Bad Request

403 | Forbidden

404 | Not Found

405 | Method Not Allowed

414 | URI Too Long

416 | Range Not Satisfiable

CloudFront Custom Errors

4xx

- 400 | Bad Request
- 403 | Forbidden
- 404 | Not Found
- 405 | Method Not Allowed
- 414 | URI Too Long
- 416 | Range Not Satisfiable

5xx

- 500 | Internal Server Error

CloudFront Custom Errors

4xx

- 400 | Bad Request
- 403 | Forbidden
- 404 | Not Found
- 405 | Method Not Allowed
- 414 | URI Too Long
- 416 | Range Not Satisfiable

5xx

- 500 | Internal Server Error
- 501 | Not Implemented

CloudFront Custom Errors

4xx

400 | Bad Request
403 | Forbidden
404 | Not Found
405 | Method Not Allowed
414 | URI Too Long
416 | Range Not Satisfiable

5xx

500 | Internal Server Error
501 | Not Implemented
502 | Bad Gateway

CloudFront Custom Errors

4xx

- 400 | Bad Request
- 403 | Forbidden
- 404 | Not Found
- 405 | Method Not Allowed
- 414 | URI Too Long
- 416 | Range Not Satisfiable

5xx

- 500 | Internal Server Error
- 501 | Not Implemented
- 502 | Bad Gateway
- 503 | Service Unavailable

CloudFront Custom Errors

4xx

400 | Bad Request

403 | Forbidden

404 | Not Found

405 | Method Not Allowed

414 | URI Too Long

416 | Range Not Satisfiable

5xx

500 | Internal Server Error

501 | Not Implemented

502 | Bad Gateway

503 | Service Unavailable

504 | Gateway Timeout

S3 Management Console

https://s3.console.aws.amazon.com/s3/buckets/theevent-errors/?region=ap-southeast-2&tab=overview

aws Services Resource Groups durst Global Support

Amazon S3 > theevent-errors

Overview Properties Permissions Management

Type a prefix and press Enter to search. Press ESC to clear.

Upload Create folder Download Actions

EU (Ireland) Viewing 1 to 1

Name	Last modified	Size	Storage class
errors	--	--	--

Viewing 1 to 1

Operations 0 In progress 2 Success 0 Error

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S3 Management Console

https://s3.console.aws.amazon.com/s3/buckets/theevent-errors/?region=ap-southeast-2&tab=overview

aws Services Resource Groups durst Global Support

Amazon S3 > theevent-errors > errors

Overview

Type a prefix and press Enter to search. Press ESC to clear.

Upload Create folder Download Actions EU (Ireland)

Name	Last modified	Size	Storage class
404.html	Jun 9, 2019 2:03:35 AM GMT+0200	6.9 KB	Standard

Viewing 1 to 1

Operations 0 In progress 2 Success 0 Error

AWS CloudFront Management X +

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

Distributions Services Resource Groups ⌂ durst Global Support ?

CloudFront Distributions > ES6J41BR5J5GT

General Origins and Origin Groups Behaviors Error Pages Restrictions Invalidations Tags

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Viewing 1 to 1 of 1 Items

Distributions What's New Reports & Analytics Cache Statistics Monitoring and Alarms Popular Objects Top Referrers Usage Viewers Security Origin Access Identity Public key Field-level encryption

AWS CloudFront Management X +

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#

Services Resource Groups ⌂ durst Global Support

Create Custom Error Response

Custom Error Response Settings

HTTP Error Code	404: Not Found	i
Error Caching Minimum TTL (seconds)	300	i
Customize Error Response	<input checked="" type="radio"/> Yes <input type="radio"/> No	i
Response Page Path	/errors/404.html	i
HTTP Response Code	200: OK	i

[Cancel](#) [Create](#)

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CloudFront Custom Error

[Create Custom Error Response](#)

[Edit](#)

[Delete](#)

Viewing 1 to 1 of 1 Items				
	HTTP Error Code	Error Caching Minimum TTL	Response Page Path	HTTP Response Code
<input type="checkbox"/>	404	300	/errors/404.html	200

Viewing 1 to 1 of 1 Items

AWS CloudFront Management

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

Distributions

What's New

Reports & Analytics

Cache Statistics

Monitoring and Alarms

Popular Objects

Top Referrers

Usage

Viewers

Security

Origin Access Identity

Public key

Field-level encryption

Services

Resource Groups

durst

Global

Support

CloudFront Distributions > ES6J41BR5J5GT

General Origins and Origin Groups Behaviors Error Pages Restrictions Invalidations Tags

Origins

Create Origin Edit Delete

	Origin Domain Name and Path	Origin ID	Origin Type	Origin Access Identity
<input type="checkbox"/>	pluralsight-demo-1742408641.ap-southeast-2.elb.amazonaws.com	TheEvent-ELBOrigin	Custom Origin	-
<input type="checkbox"/>	theevent-errors.s3.amazonaws.com	S3-theevent-errors	S3 Origin	origin-access-identity/cloudfront/E3F

Origin Groups

Create an origin group to provide rerouting during a failover event. You can associate an origin group with a cache behavior to have requests routed from a primary origin to a secondary origin for failover. You must have two origins for your distribution before you can create an origin group. Please note that with an origin group, you can only use GET, HEAD, and OPTIONS HTTP methods in your cache behavior. [Learn more](#)

AWS CloudFront Management

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

Distributions

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Services

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Behaviors

Error Pages

Restrictions

Invalidations

Tags

Create Behavior

Edit

Delete

Change Precedence: Move Up

Move Down

Save

Viewing 1 to 2 of 2 Items

	Precedence	Path Pattern	Origin or Origin Group	Viewer Protocol Policy	Forwarded Query Strings	Trusted Signers
<input type="checkbox"/>	0	/errors/*	S3-theevent-errors	Redirect HTTP to HTTPS	No	-
<input type="checkbox"/>	1	Default (*)	TheEvent-ELBOrigin	Redirect HTTP to HTTPS	No	-

Viewing 1 to 2 of 2 Items

General	Origins and Origin Groups	Behaviors	Error Pages	Restrictions	Invalidations	Tags
Edit						

Distribution ID ES6J41BR5J5GT
ARN arn:aws:cloudfront::359659591268:distribution/ES6J41BR5J5GT
Log Prefix -
Delivery Method Web
Cookie Logging Off
Distribution Status Deployed
Comment -
Price Class Use All Edge Locations (Best Performance)
AWS WAF Web ACL -
State Enabled
Alternate Domain Names (CNAMEs) www.dyrcz.me

Missing URI Test

<https://www.dyrcz.me/fileshouldntexist.html>



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Sorry, the page you requested does not exist!

Head back to the homepage.

Request URL: <https://www.dyrcz.me/fileshouldntexist.html>

Request method: GET

Remote address: 143.204.247.18:443

Status code: **200** OK [?](#)

Version: HTTP/2.0

Referrer Policy: no-referrer-when-downgrade

[Edit and Rese...](#)

 Filter headers

Summary

Summary

Summary

Error Handling

Restricting Geography



Andy Dyracz
CLOUD ARCHITECT
@adyracz

Prevents specific geographic locations from accessing content distributed through a CloudFront web distribution

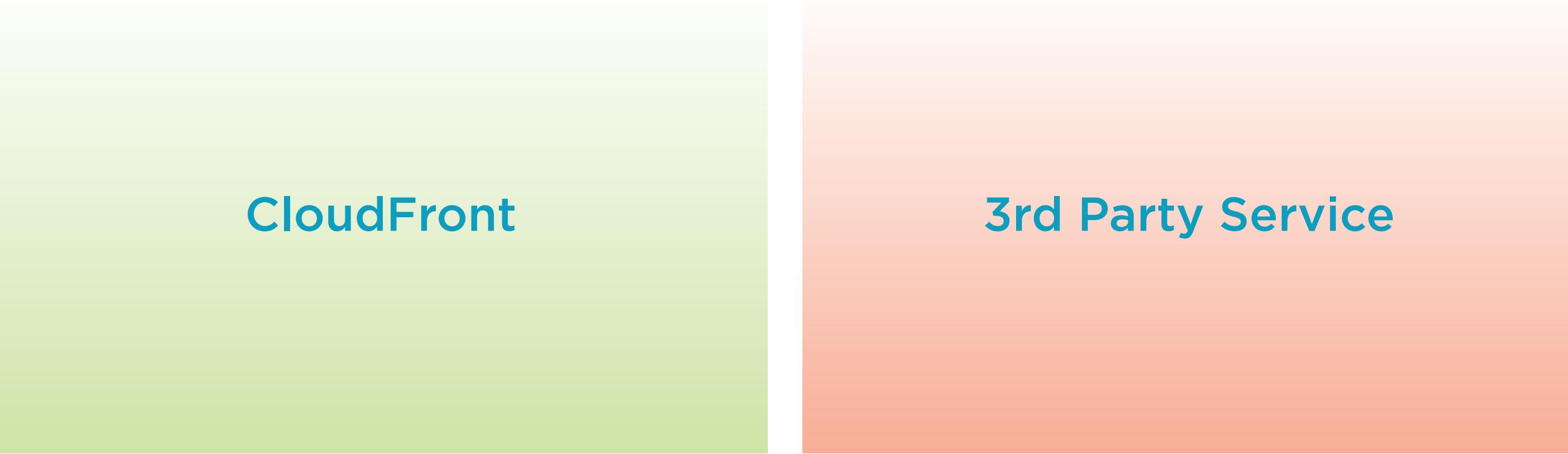
Geo Restrictions

Geo Restrictions



CloudFront

Geo Restrictions



CloudFront

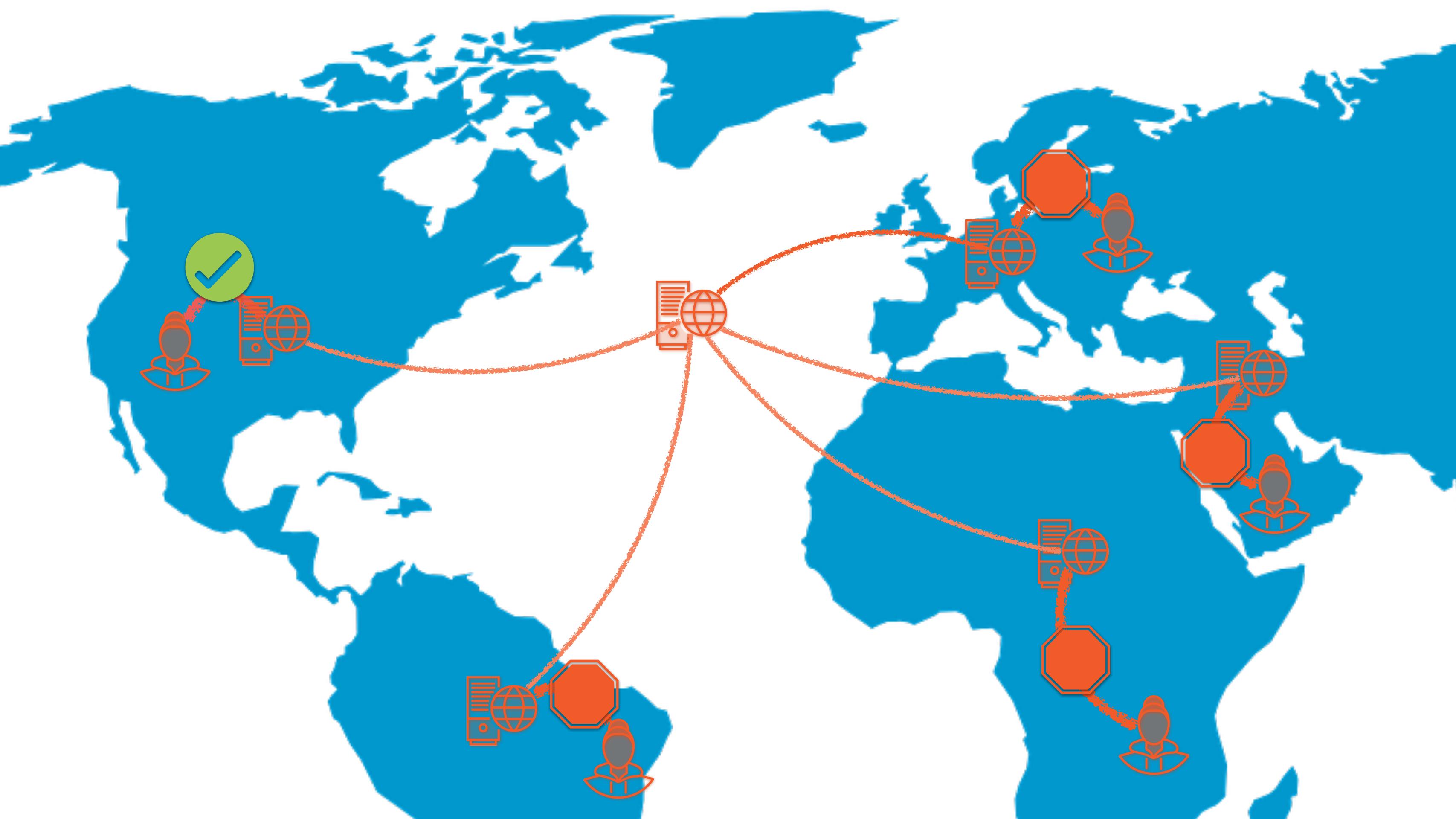
3rd Party Service



**Allow access only from
approved countries.**



Whitelist

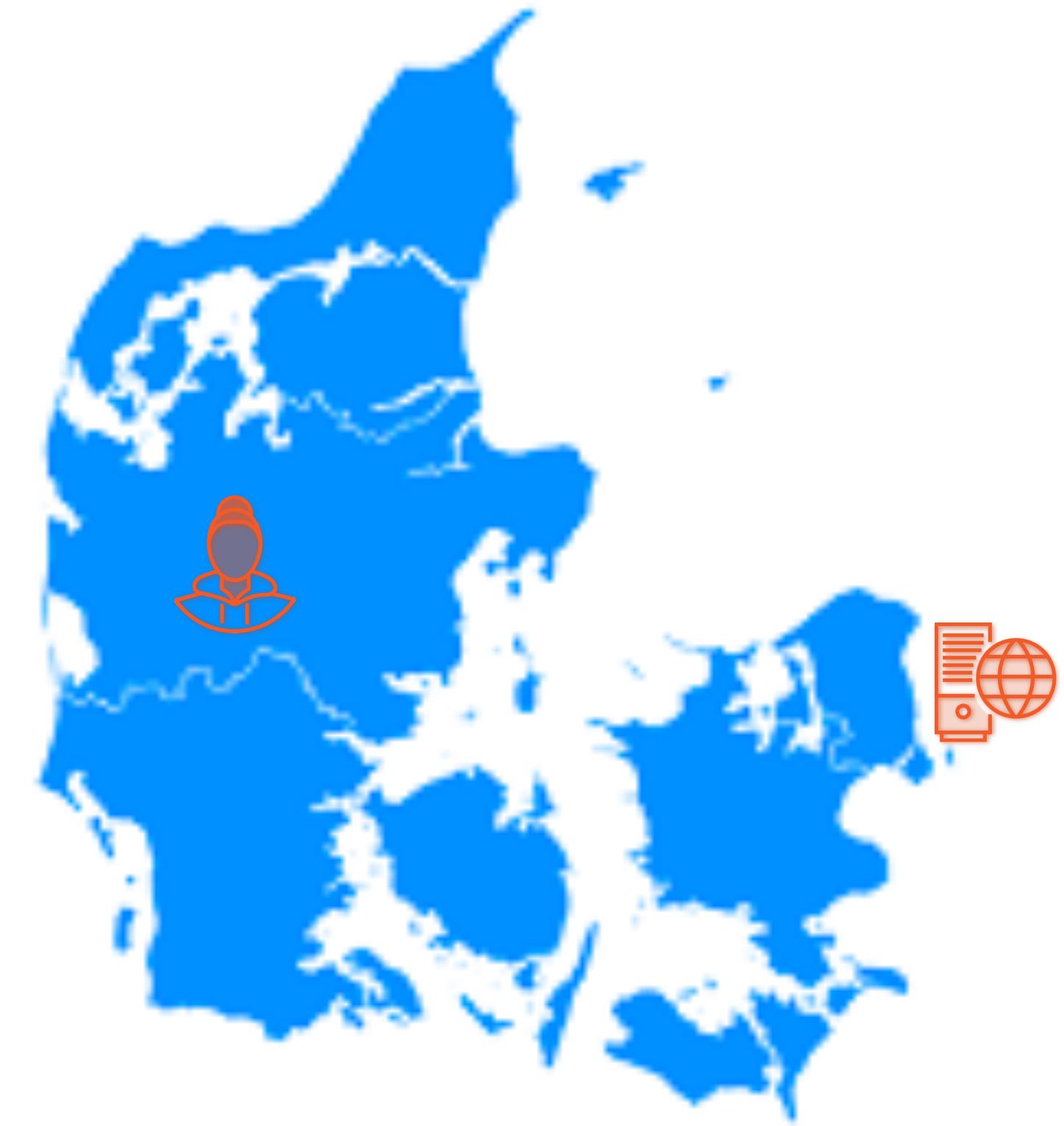


BlackList

Prevent access from listed countries

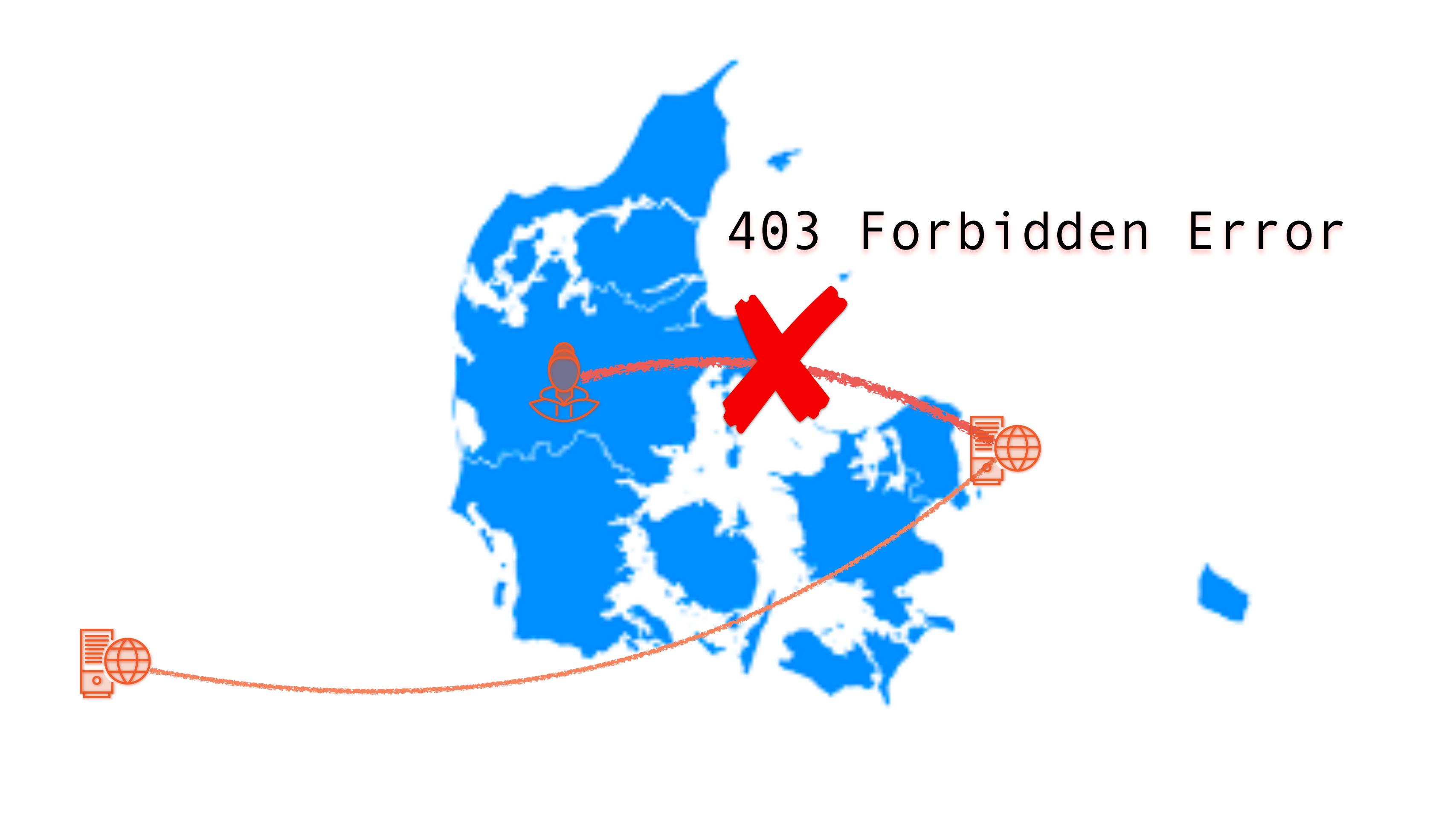












403 Forbidden Error



Create Custom Error Response

Custom Error Response Settings

HTTP Error Code

403: Forbidden



Error Caching Minimum TTL
(seconds)

300



Customize Error Response

Yes
 No



Response Page Path

/errors/403.html



HTTP Response Code

200: OK



Cancel

Create

AWS CloudFront Management

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

CloudFront Distributions > ES6J41BR5J5GT

Distributions

General Origins and Origin Groups Behaviors Error Pages Restrictions Invalidations Tags

What's new *

Edit

Distribution ID ES6J41BR5J5GT
ARN arn:aws:cloudfront::359659591268:distribution/ES6J41BR5J5GT
Log Prefix -
Delivery Method Web
Cookie Logging Off
Distribution Status InProgress
Comment -
Price Class Use All Edge Locations (Best Performance)
AWS WAF Web ACL -
State Enabled

Alternate Domain Names (CNAMEs) www.dyrcz.me
SSL Certificate dyrcz.me (88a3a983-59d1-41be-9345-85c23c54c5f6)
Domain Name d2ee8i73kfyy7w.cloudfront.net
Custom SSL Client Support Clients that Support Server Name Indication (SNI) - (Recommended)
Security Policy TLSv1.2_2018
Supported HTTP Versions HTTP/2, HTTP/1.1, HTTP/1.0
IPV6 Enabled

CloudFront

Reports & analytics

- Cache statistics
- Monitoring
- Alarms
- Popular objects
- Top referrers
- Usage
- Viewers

Security

- Origin access identity
- Public key
- Field-level encryption

AWS CloudFront Management

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

CloudFront Distributions > ES6J41BR5J5GT

Distributions

General Origins and Origin Groups Behaviors Error Pages Restrictions Invalidations Tags

If you need to prevent users in selected countries from accessing your content, you can specify either a whitelist (countries where they can access your content) or a blacklist (countries where they cannot). For more information, see [Restricting the Geographic Distribution of Your Content](#) in the [Amazon CloudFront Developer Guide](#).

What's new *

Reports & analytics

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CloudFront Distributions > ES6J41BR5J5GT

Viewing 1 to 1 of 1 Items

	Restriction	Status	Type
<input type="checkbox"/>	Geo Restriction	Disabled	-

Viewing 1 to 1 of 1 Items

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AWS CloudFront Management

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Viewing 1 to 1 of 1 Items

	Restriction	Status	Type
<input checked="" type="checkbox"/>	Geo Restriction	Disabled	-

Viewing 1 to 1 of 1 Items

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Edit Geo-Restrictions

Geo-Restriction Settings

Enable Geo-Restriction Yes No



[Cancel](#) [Yes, Edit](#)

Edit Geo-Restrictions

Geo-Restriction Settings

Enable Geo-Restriction Yes No



Restriction Type Whitelist Blacklist



Countries



AF -- AFGHANISTAN
AX -- ALAND ISLANDS
AL -- ALBANIA
DZ -- ALGERIA
AS -- AMERICAN SAMOA
AD -- ANDORRA

Add >>

<< Remove

Cancel

Yes, Edit

Edit Geo-Restrictions

Geo-Restriction Settings

Enable Geo-Restriction Yes No



Restriction Type Whitelist Blacklist



Countries



AF -- AFGHANISTAN
AX -- ALAND ISLANDS
AL -- ALBANIA
DZ -- ALGERIA
AS -- AMERICAN SAMOA
AD -- ANDORRA

Add >>

<< Remove

Cancel

Yes, Edit

Edit Geo-Restrictions

Geo-Restriction Settings

Enable Geo-Restriction Yes No



Restriction Type Whitelist Blacklist



Countries



UG -- UGANDA
UA -- UKRAINE
AE -- UNITED ARAB EMIRATES
GB -- UNITED KINGDOM
US -- UNITED STATES
UM -- UNITED STATES MINOR OUTL

Add >>

<< Remove

AT -- AUSTRIA
BE -- BELGIUM
BG -- BULGARIA
HR -- CROATIA
CY -- CYPRUS
CZ -- CZECH REPUBLIC

Cancel

Yes, Edit

AWS CloudFront Management

https://console.aws.amazon.com/cloudfront/home?region=ap-southeast-2#distribution-settings:ES6J41E

CloudFront Distributions > ES6J41BR5J5GT

Distributions

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CloudFront Distributions > ES6J41BR5J5GT

Viewing 1 to 1 of 1 Items

	Restriction	Status	Type
<input type="checkbox"/>	Geo Restriction	Enabled	Blacklist

Viewing 1 to 1 of 1 Items

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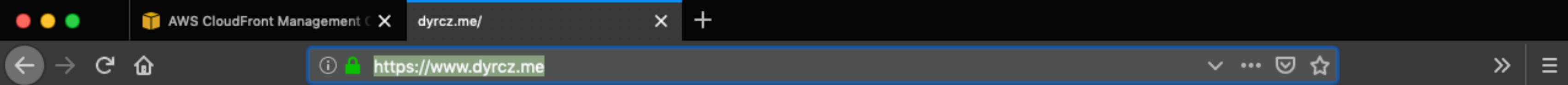
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THE EVERY DEVELOPER CONFERENCE ANYWHERE CONFERENCE

10-12 June, Copenhagen Opera House, København, DK 

[About The Event](#)



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
-<Error>
  <Code>AccessDenied</Code>
  <Message>Access Denied</Message>
  <RequestId>BF8BC8E0C11D0C67</RequestId>
  -<HostId>
    H+5G4AQ6+ve4B1KePU3uGf+YCH/ckc24LQClPKGHYUaWmHklGkG5QQVuULx/+6vJgaOA5giVd1w=
  </HostId>
</Error>
```



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4 😱 3

Sorry, the page you requested is not available for your current country due to GDPR!

Head back to the homepage.



Home About Speakers Schedule Venue Hotels Gallery Sponsors Contact

Buy Tickets

4 😱 3

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Summary

Summary

Summary

CloudFront Geo Restrictions