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# A CDN as a Telescope

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# Verizon Digital Media Services' Edgecast CDN

## North America

### PoPs

Atlanta  
Boston  
Chicago  
Dallas  
Denver  
Detroit  
Guadalajara  
Los Angeles  
Mexico City  
Miami  
New York  
Philadelphia  
Puebla  
Querétaro  
San Jose  
Seattle  
Washington D.C.



## South America

### PoPs

Barranquilla  
Buenos Aires  
Lima  
Medellín  
Quito  
Rio de Janeiro  
São Paulo  
Valparaiso

## Europe

### PoPs

Amsterdam  
Copenhagen  
Frankfurt  
Helsinki  
London  
Madrid  
Marseille  
Milan  
Paris  
Riga  
Stockholm  
Vienna  
Warsaw



## Africa

### PoPs

Johannesburg



## Middle East

### PoPs

Fujairah  
Muscat



## Asia

### PoPs

Bangalore  
Batam  
Chennai  
Hong Kong  
Jakarta  
Mumbai  
New Delhi  
Osaka  
Seoul  
Singapore  
Taiwan  
Tokyo



## Oceania

### PoPs

Auckland  
Melbourne  
Sydney



**73** Tbps

Network Capacity

**130+**

PoPs

**6**

Continents

**4.5K+**

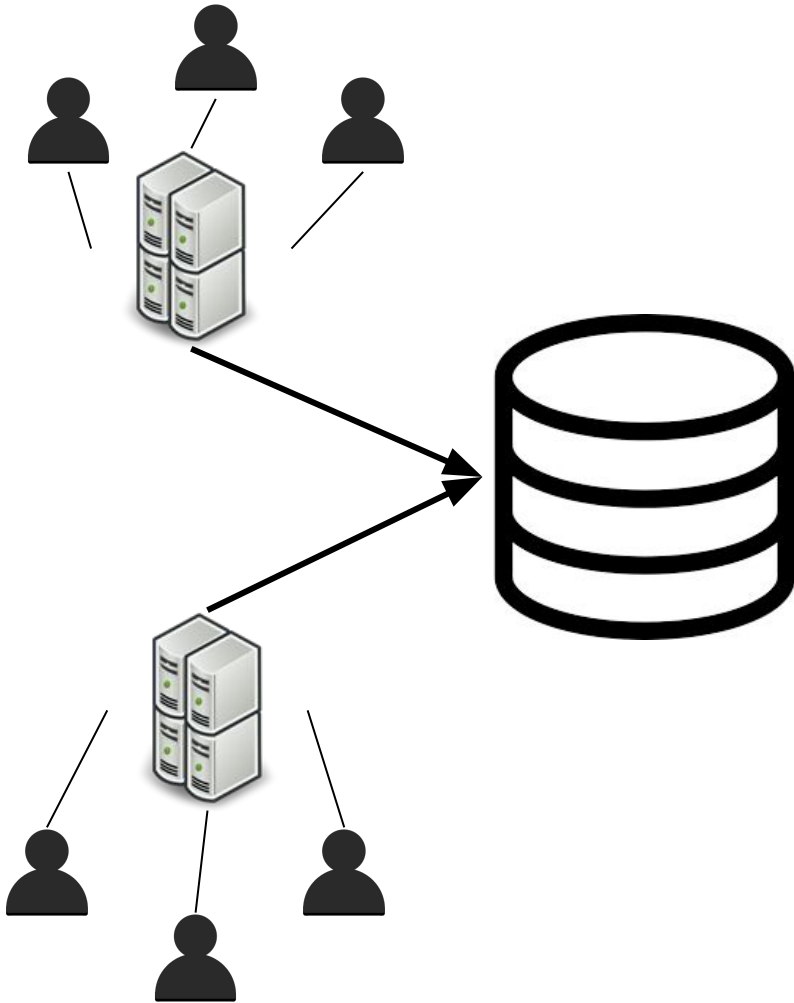
Interconnects

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## CDN as a Telescope

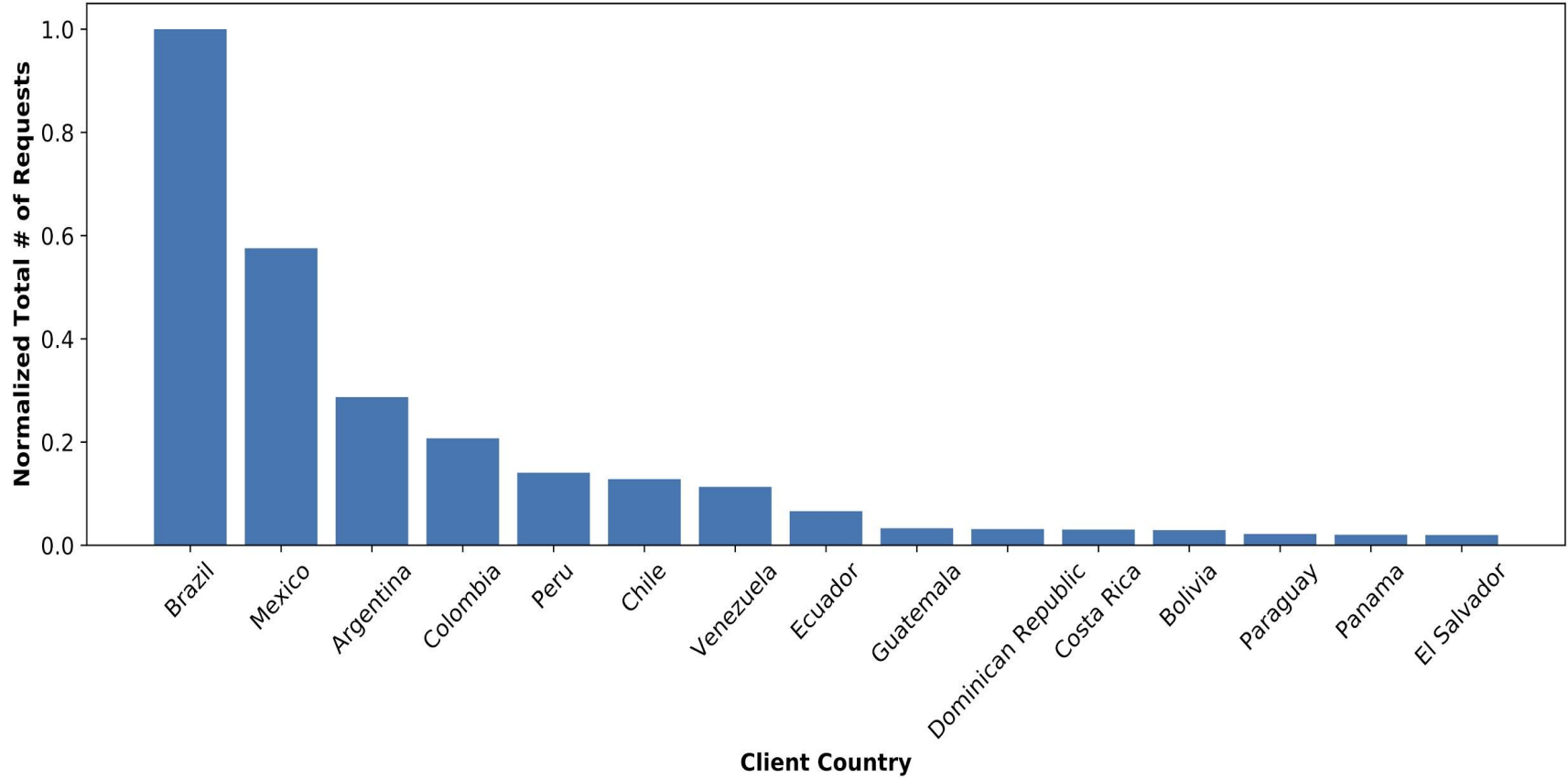
- **Understand the trends in ISP behaviors**
- **Large scale routing behavior**
- **Internet Performance Analysis**

# Dataset

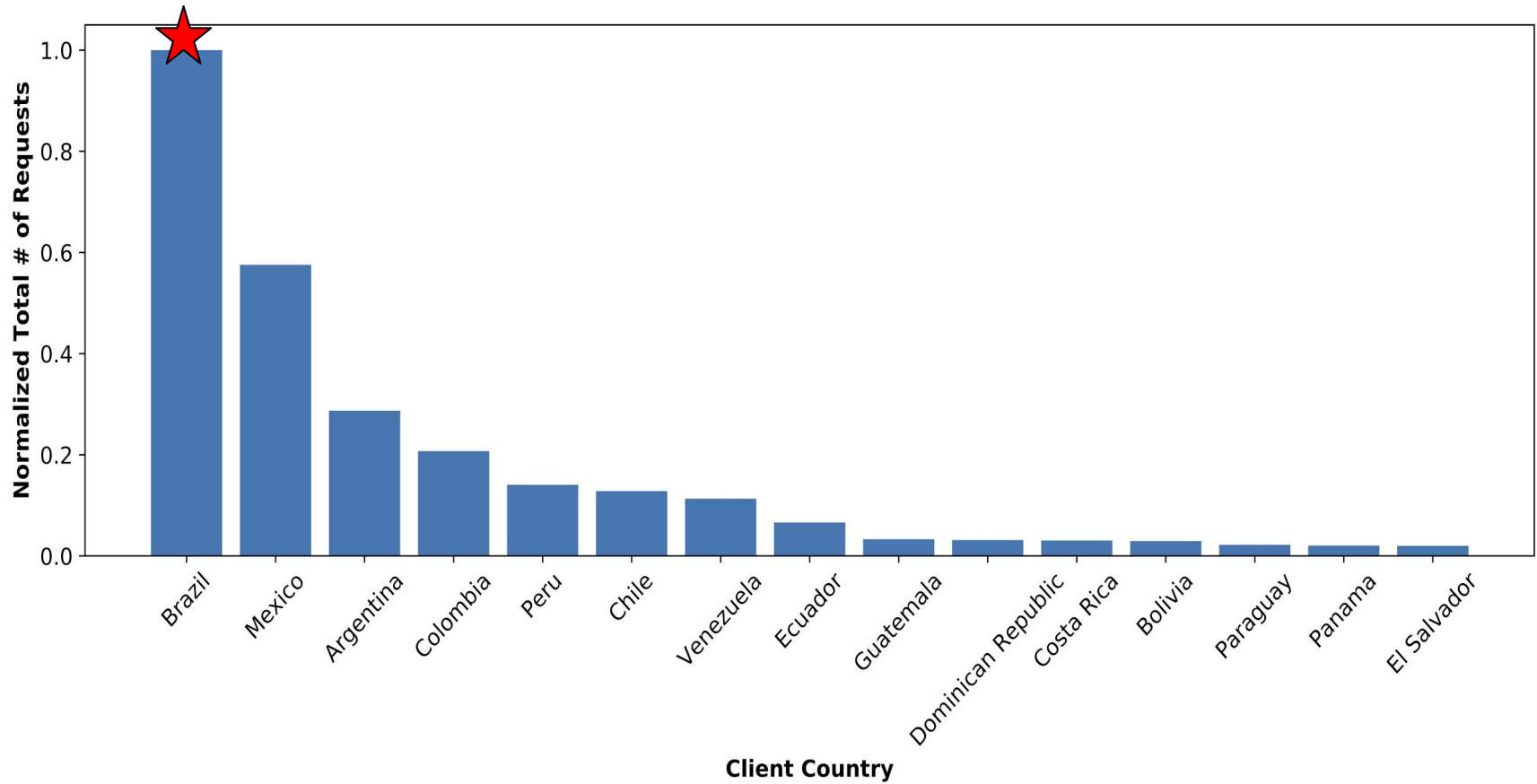


Client Ip	Country of origin	ASN	PoP	# Requests
x.x.x.0 /24	Brazil	1234	ABC	98765
x.x.x.0 /24	Mexico	5678	DEF	43210
x.x.x.0 /24	Colombia	1234	GHI	98765
x.x.x.0 /24	Chile	5678	ABC	43210

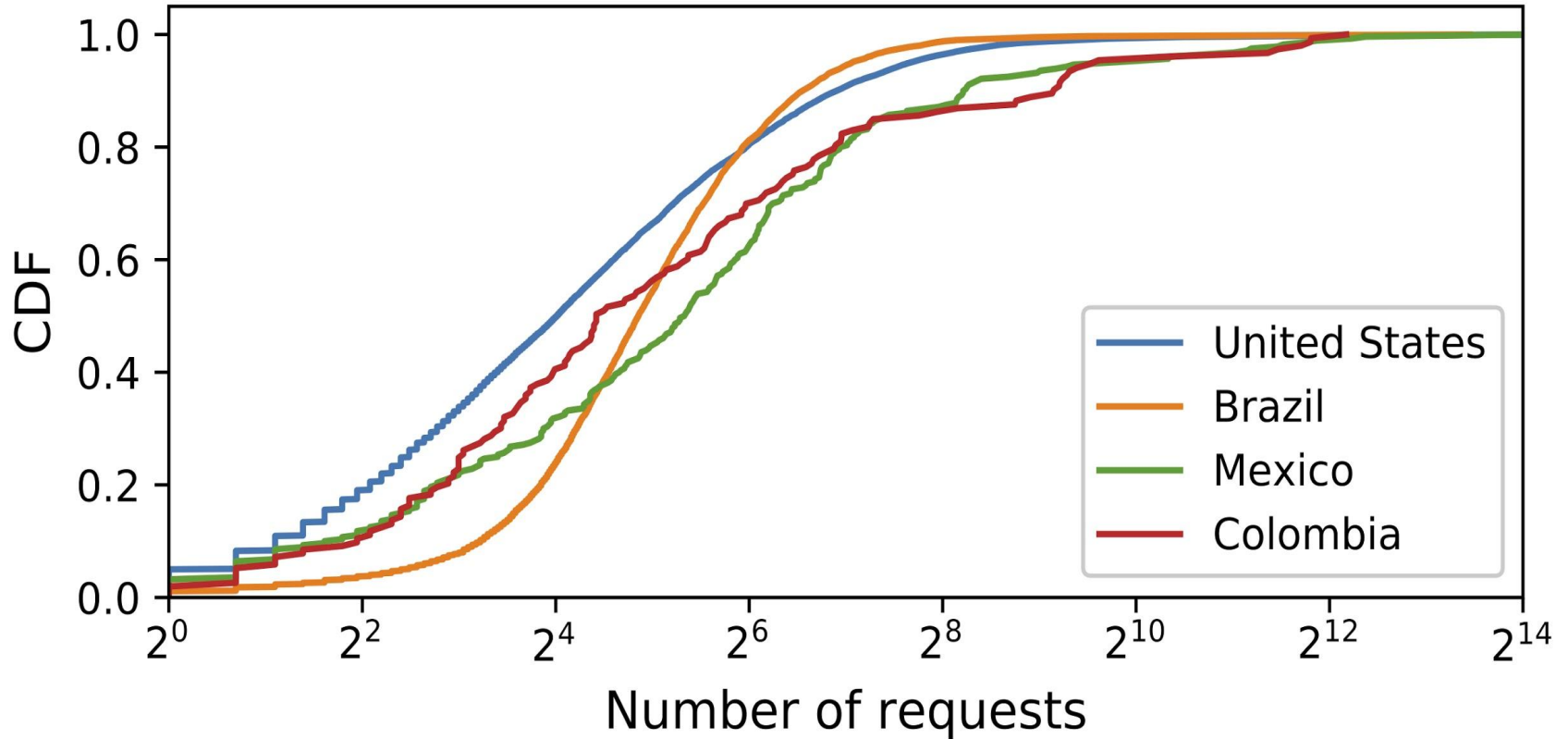
# Request counts by country of origin



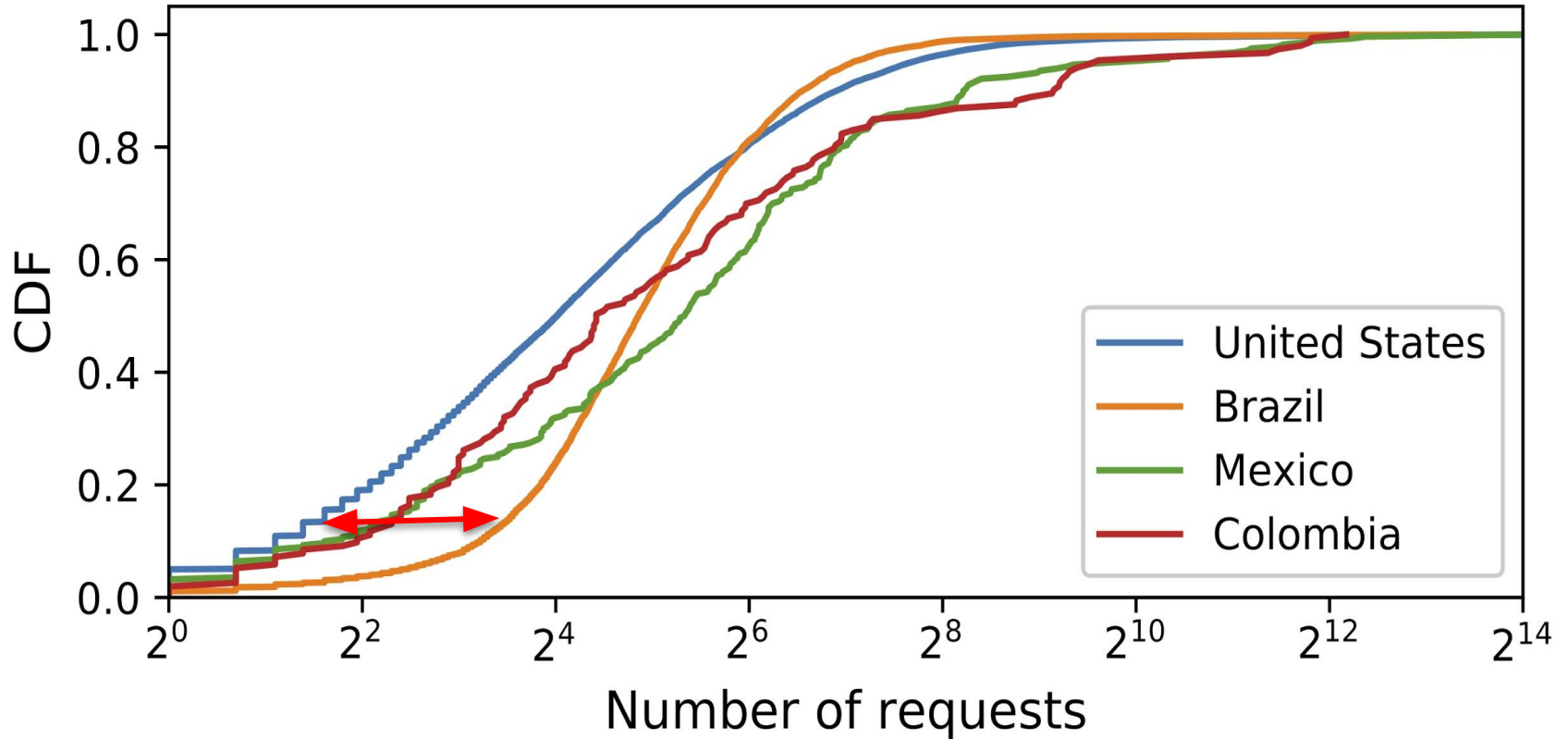
# Request counts by country of origin



# AS popularity by country

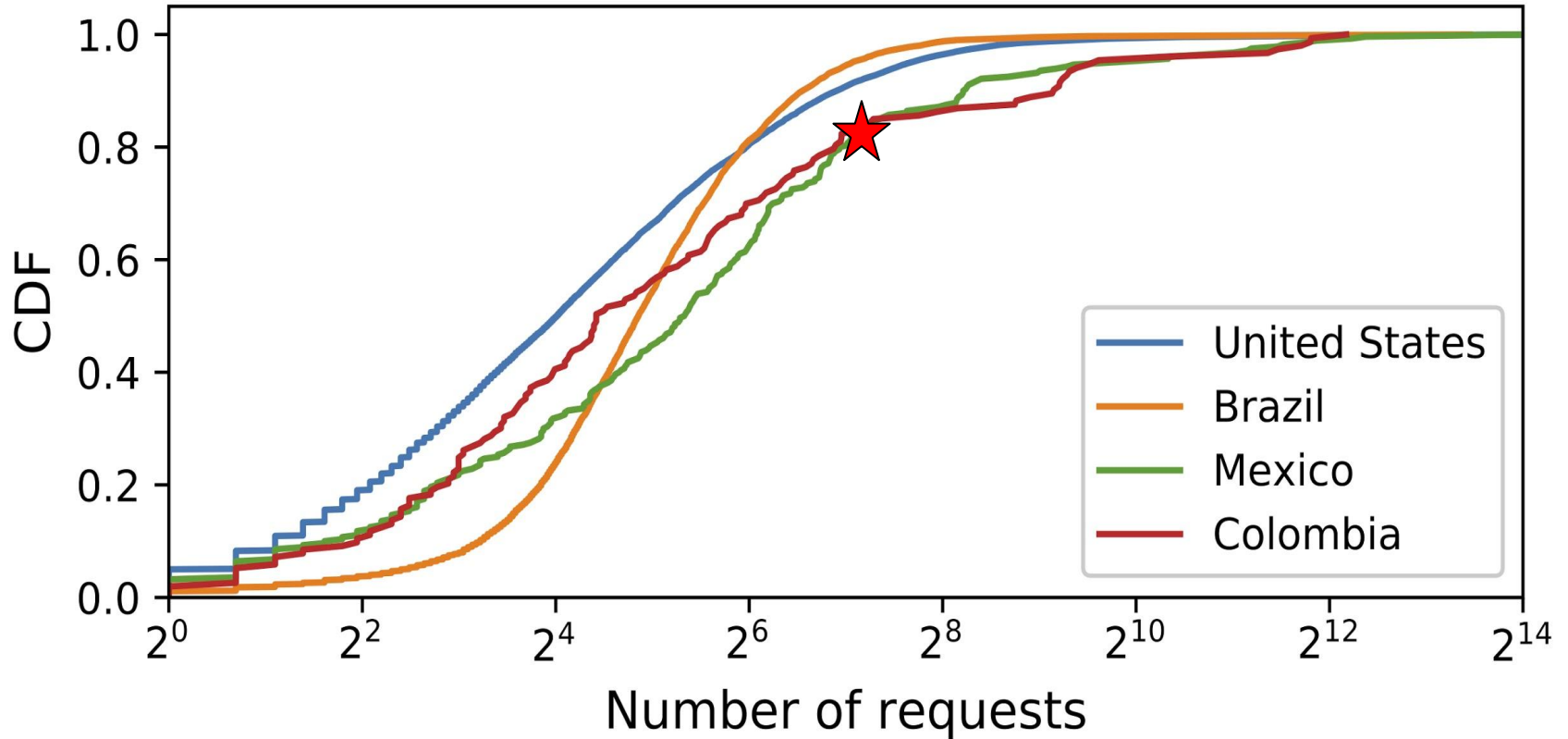


# AS popularity by country

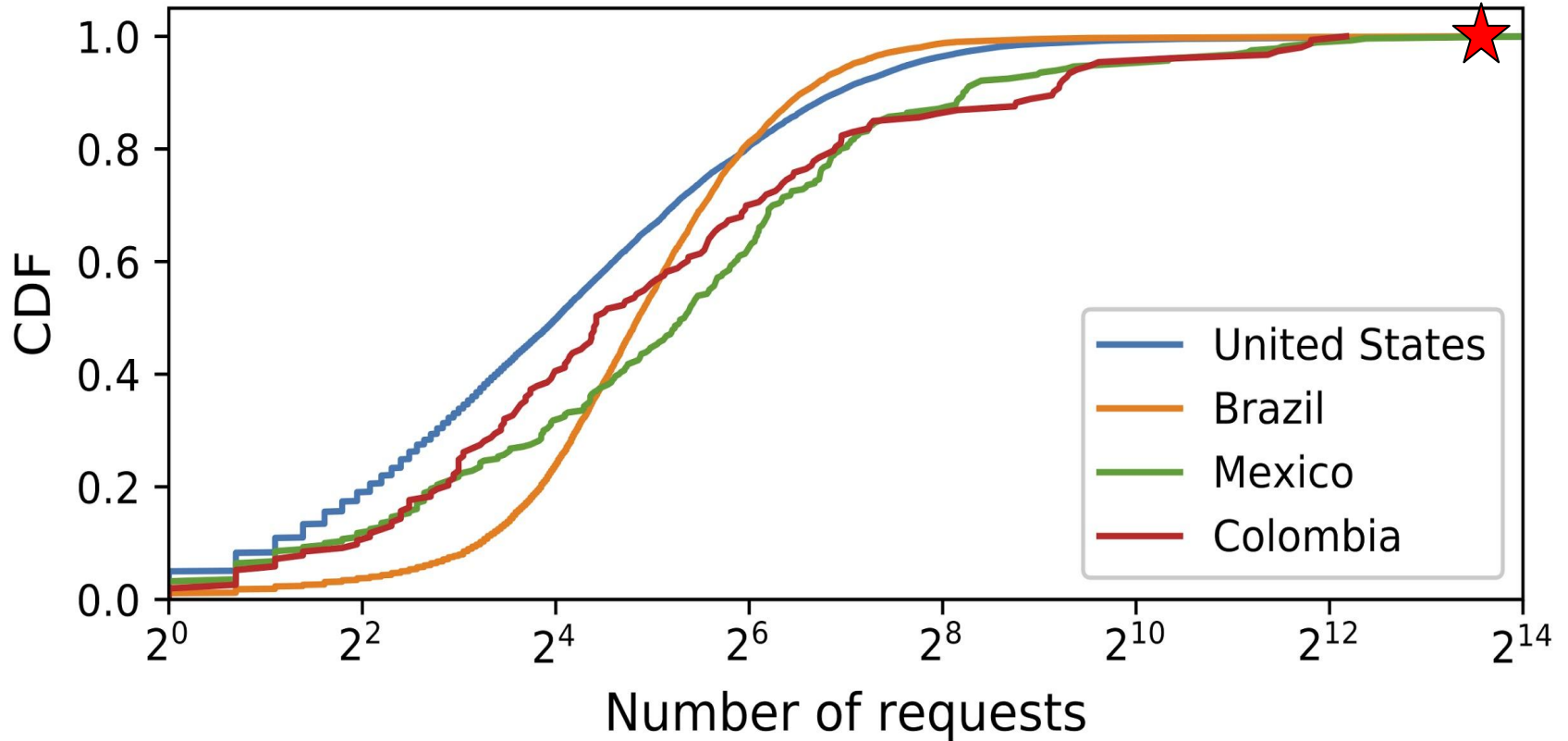




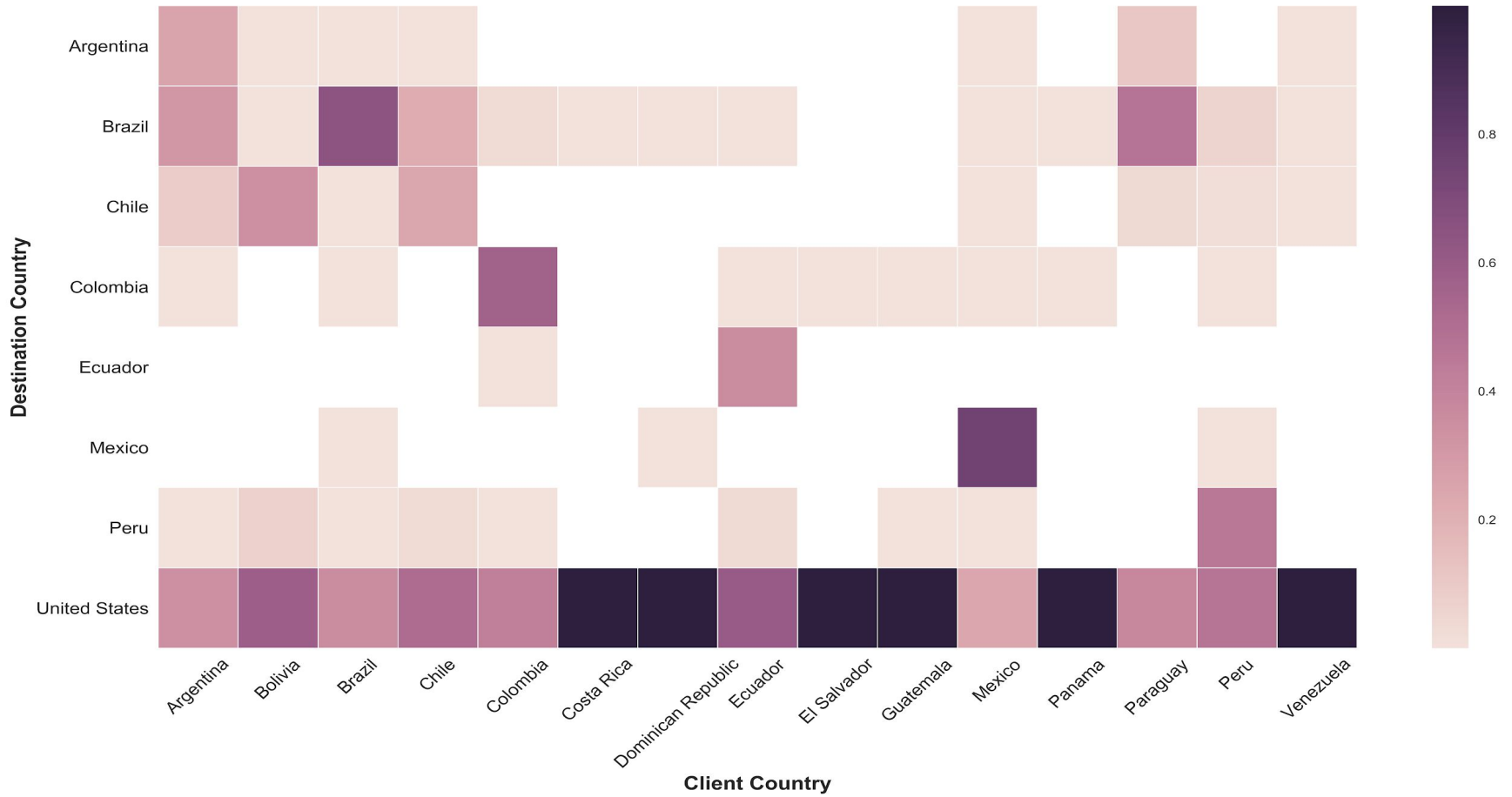
# AS popularity by country



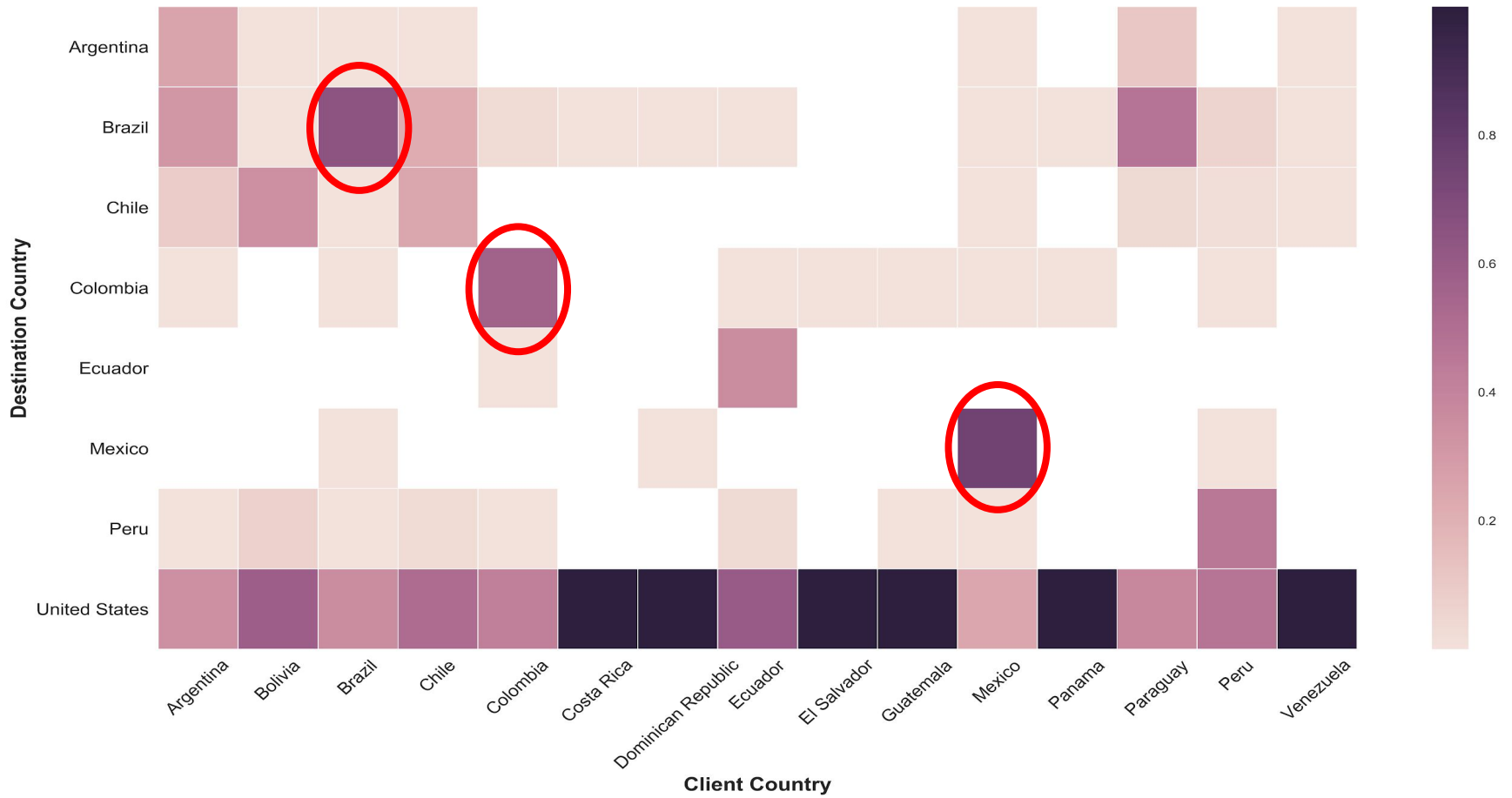
# AS popularity by country



# Client Requests

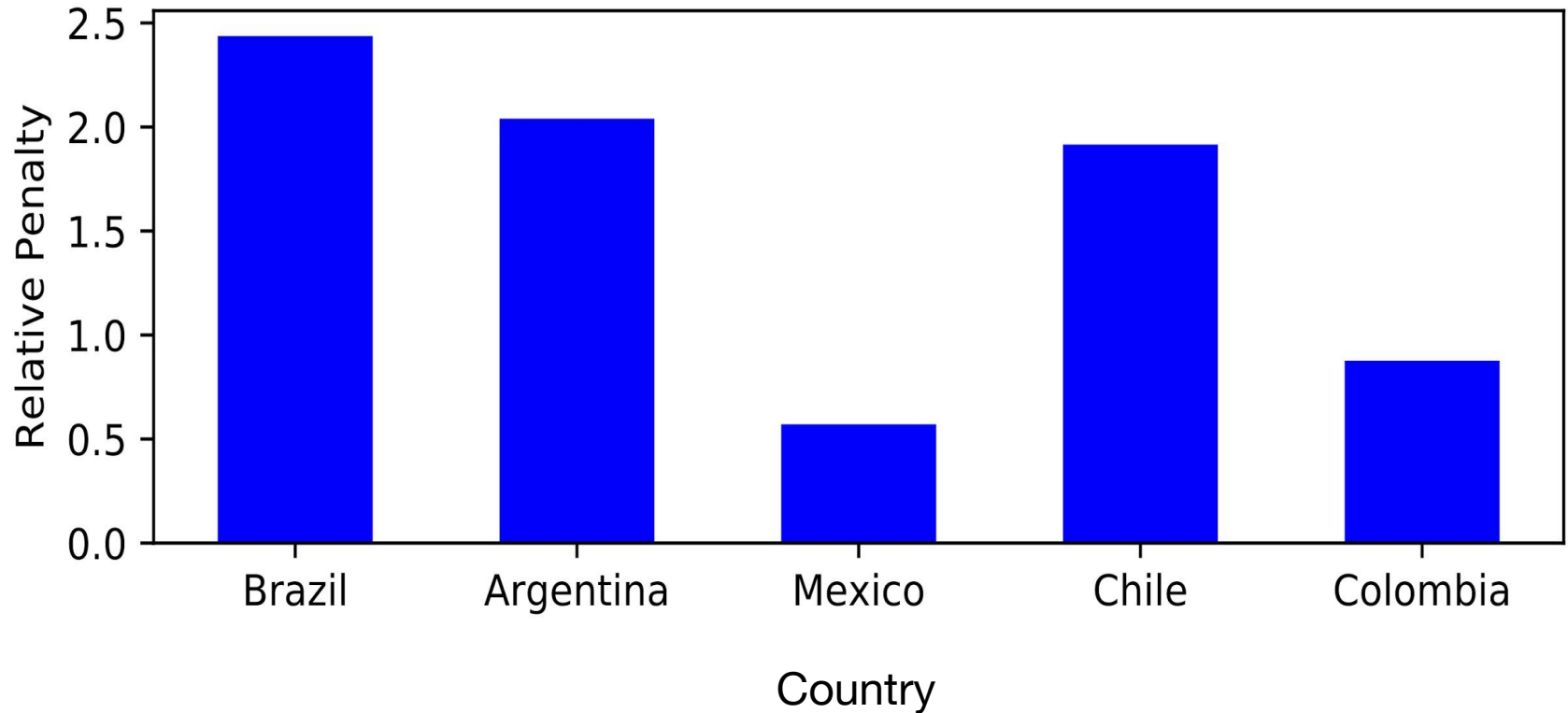


# Client Requests

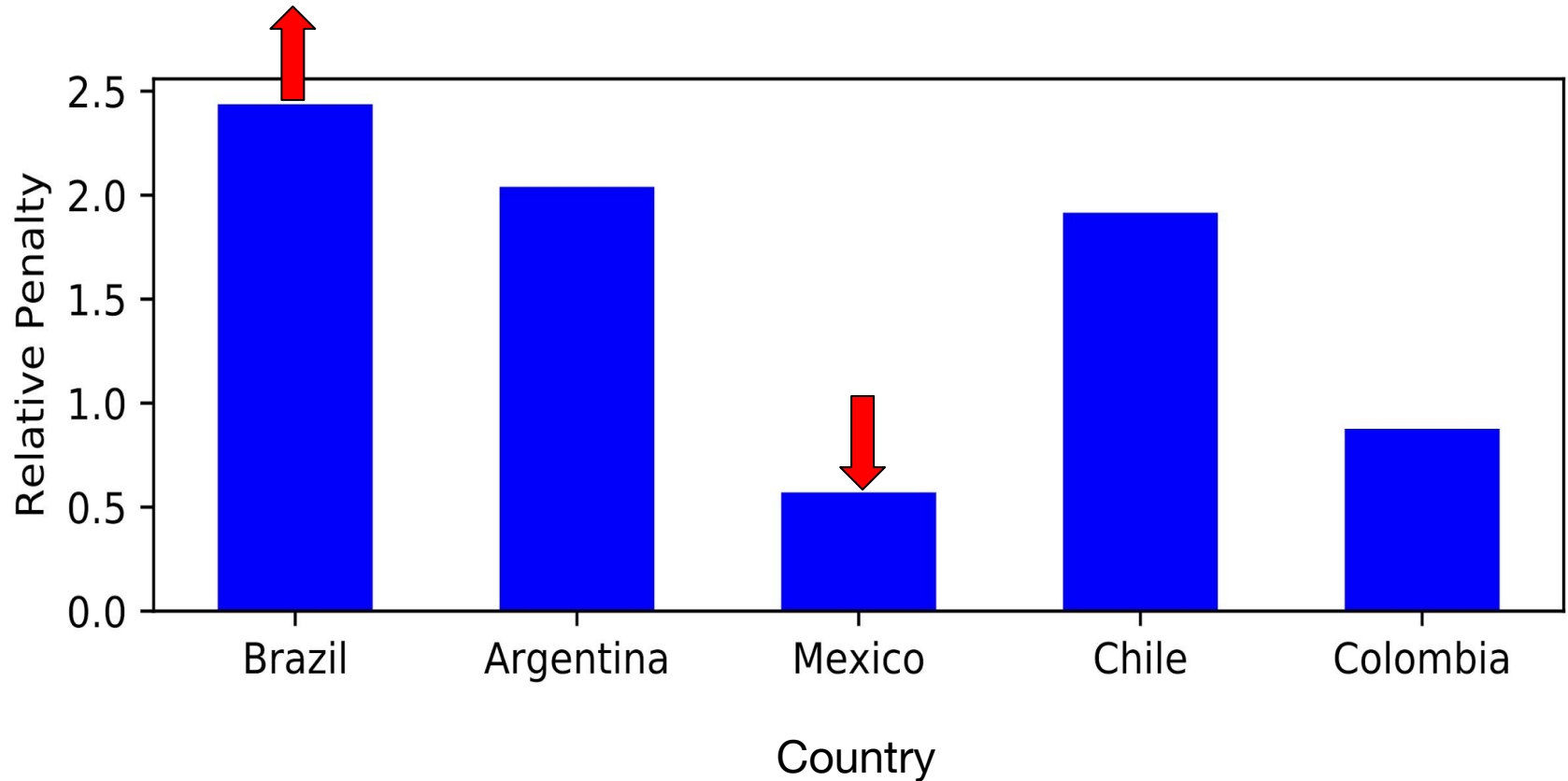


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# RTT Penalty of inter-country traffic



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# Conclusion

- **Large scale CDN as a passive observatory.**
  - Visibility into region specific behavior.
  - Routing behavior.
  - Penalty incurred in inter-country traffic.
  
- **Provides infrastructure planning insight for the CDN and the larger operator community.**

**Thank you.**