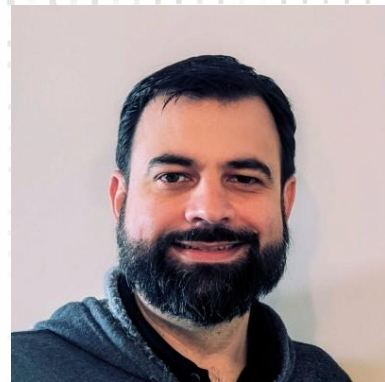


Managing a Global Anycast Network is Hard

But it sure is nice...

Craig Jackson, DevOps Engineer



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Redneck Adventurer

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Process / Automation

Studied Horticulture and like growing plants!

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Agenda

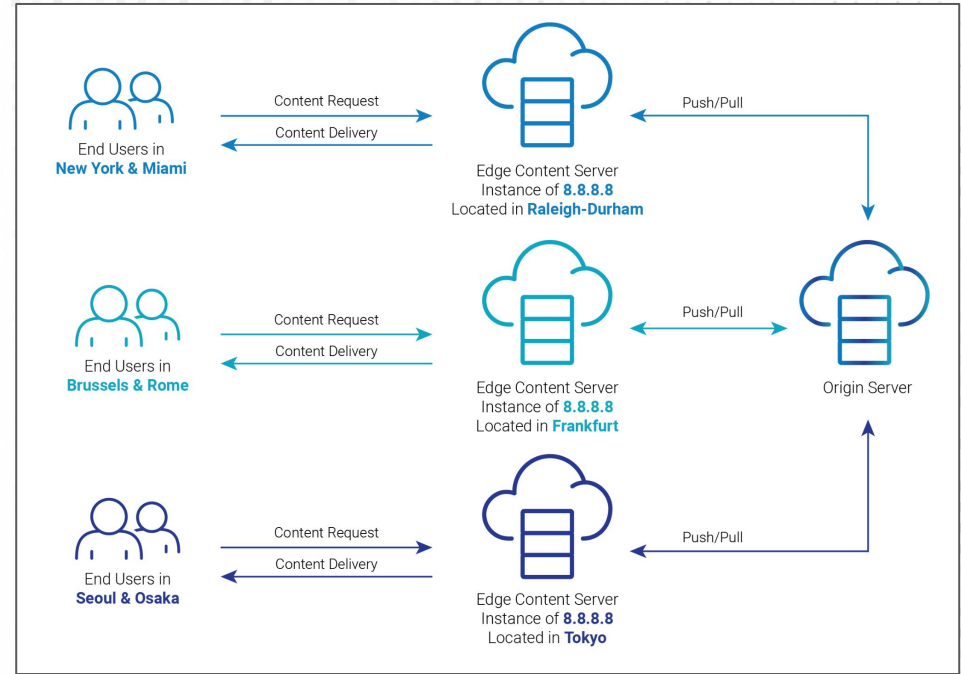
- **Introduction to Anycast**
- **Introduction to BGP**
- **What makes it hard?**
- **But it is so nice!**

You're already using anycast!

- If you browse, shop, stream, game or do anything online, you're already using anycast
- Anycast powers the worlds DNS, powering the "phone book" devices use to learn their destinations
- Every major global company uses Anycast in some way - from Google to Amazon, Cloudflare to Akamai
- Your favorite open source CDNs and network technologies all use and power the tooling that help build Anycast

Anycast - What is it?

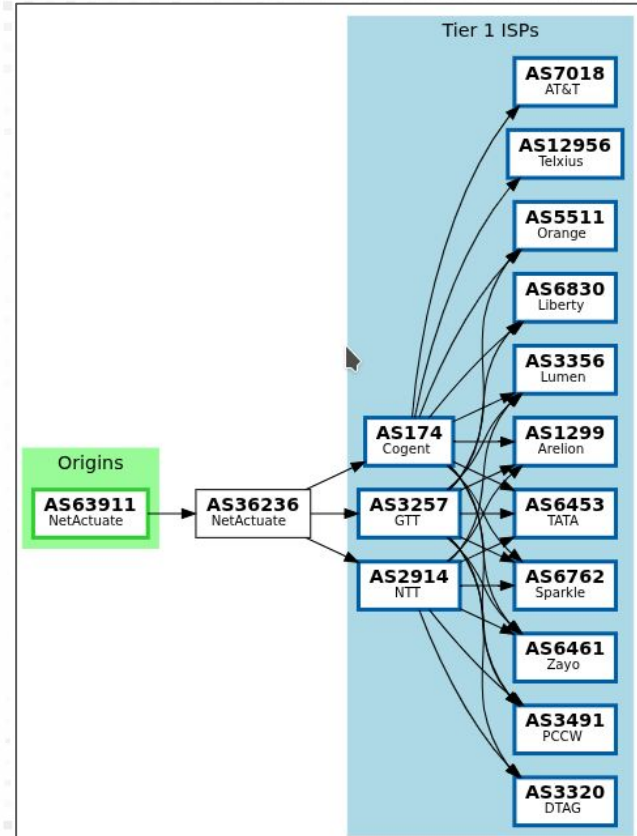
- Announcing the same IP block from different regions
 - Think CF 1.1.1.1, Google 8.8.8.8
- Create BGP ingress workers in remote PoP
- Serve Data from the remote PoP for low latency connectivity
- If a site or a worker go down, the traffic is absorbed by other regional nodes.



BGP - Border Gateway Protocol

- Register an ASN
- Add an IP prefix to the ASN
- Peer with a BGP Neighbor
- Announce / Withdrawal Prefix
- Attach communities

Announcements will continue upstream based upon policies and filters.

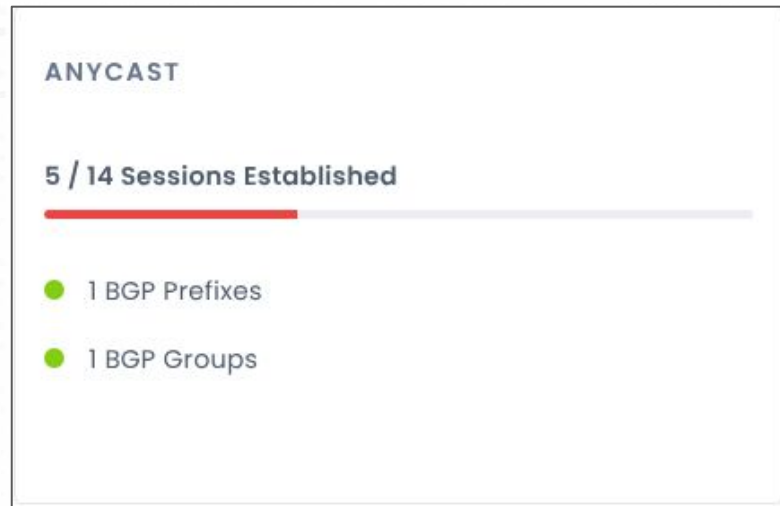


Why so Serious?!

- BGP is based upon policies not physical locations
 - Regional politics can change your routing
- Announcements spread like a virus
 - You're not in control after it leaves your ASN
- Announcing in Singapore could pull traffic from Australia based upon regional policies out of your control
- It's hard to monitor Anycast traffic from inside your own network
- The Cost to Setup, Monitor, and alert based upon global routing tables can be prohibitive and expensive

Anycast Benefits:

- Natural Load Balancing
 - DDOS protection
- Self healing routing algorithm
- Favors the shortest routing path
- Any latency sensitive service could benefit.
 - DNS services tend to be anycasted which reduces the latency across every service request



Our Global Footprint



Where to go from here?

Github

<http://www.github.com/netactuate/>

Terraform Module

Ansible Playbooks



anycast  com

Anycast.com

Resource Hub for BGP
Anycast & Networking

<https://anycast.com/>

The Serial Port

From Dial up to DevOps

Booth #49

<https://www.youtube.com/@theserialport>



Thank You.

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www.github.com/netactuate