

DNS Anycast Visibility (the lack of)

Canadian Internet Registration Authority (CIRA)

Jacques Latour (**Apologies, Home Sick**)

Director, Information Technology

DNS-OARC @ Teddington, UK, March 2012

Presented by Jake Zack

DNS Anycast at CIRA

- CIRA uses 4 DNS Anycast service providers
 - ISC SNS Public Benefit
 - ISC SNS Commercial
 - Neustar UltraDNS
 - Packet Clearing House
- We use DNS Anycast service to increase the resilience and availability of the .CA DNS

DNS Anycast Visibility

- This is the real time visibility we have on our anycast services



DNS Anycast Visibility

- This is the real time visibility we have on our anycast services

100x



DNS Anycast Visibility

- This is the real time visibility we have on our anycast services

10000x



Not
much

DNS Anycast Visibility

- This is the real time visibility we have on our anycast services

10000000x



**Not
much**

DNS Anycast Service Issues

- Each Anycast service provider has their own dashboard
- As a ccTLD, we have a real time dashboard of all the DNS server we control, it excludes the DNS Anycast nodes
 - Difficult to consolidate data from 4 various DNS anycast providers into one single dashboard
- Difficult to get DNS anycast node location and service attributes
- We don't know how each anycast node is responding in real time
 - Are we under attack somewhere?

What I would like to see

- I would like to have a standard way for each DNS Anycast node to report back 'home' at regular interval (1 min) basic information and status
 - Anycast Node ID
 - Sample duration/timestamp
 - Serial
 - Total DNS queries
 - Total DNS queries by query type

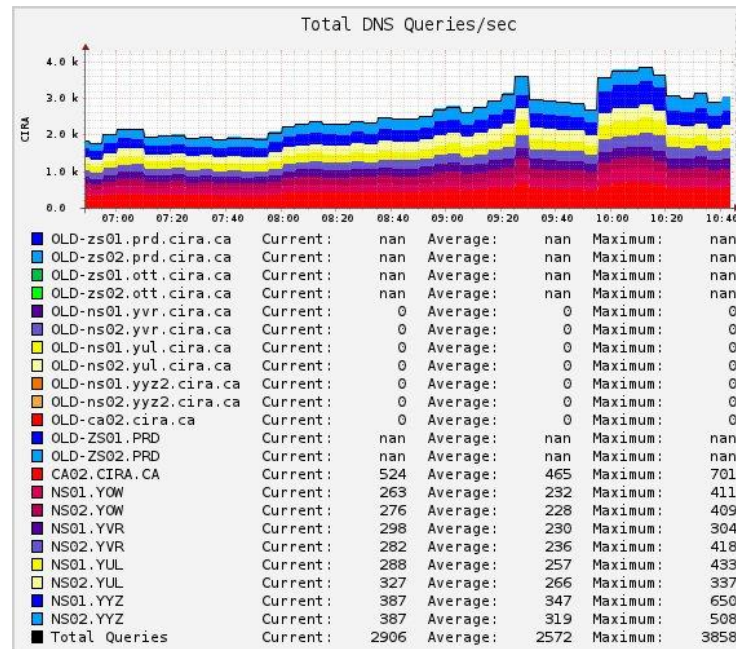
(the right stuff for a dashboard)

What I would like to see also

- Once a day, get; node information
 - Anycast Node ID
 - Location (global resilience, address, hosting provider)
 - Need to understand if we have some eggs in the same basket
 - Bandwidth capacity and/or query per second maximum capacity
 - Do facilitate our capacity planning process (DDoS mitigation)
 - DNS Software used (resilience planning)

CIRA Dashboard

- If we can get all DNS Anycast nodes to report back home on regular basis, integrate this 'real time data' with our own .CA secondary server data, then I get the dashboard I want, uh, we want 😊



Conclusion

- DNS anycast node reporting will enable the creation of an internal dashboard with near real time visibility of the entire DNS infrastructure
- Additional DNS Anycast node data will enable capacity planning functions and DDoS mitigation understanding.
- We might need an RFC to make this a standard.
- I'm sure we are not alone with in this situation

THANKS FOR LISTENING TO JAKE!!!!
(he's an awesome speaker)