Session 5
DNS vs. ECS-DNS
(subject)

Introduction

Our objective with this fifth session is to see if we can spot some differences in terms of latency/efficiency between anycast and unicast redirection but also if we see significant improvement of using ECS-DNS instead of “classic” DNS.

Geolocation with latency estimation

Q1°) Quickly explain how DNS works. What is the difference with ECS-DNS? How does it works?

Q2°) For ECS-DNS, do we need to own the prefix on which we want the DNS resolution to be made?

Q3°) What do we need to ensure in order to perform ECS-DNS requests? (in terms of resolvers, Auth servers, hostnames, etc.)

Q4°) You were given two hostnames of two popular search engines:
[“www.google.com”, “www.bing.com”]
Are you able to tell which one is using Anycast? Which one is using Unicast? (check for documentation on the Internet if you do not know)

Bonus question: what is the difference between a browser and a search engine?

Q5°) Can you think about a simple methodology, using DNS to which hostnames resolve on Anycast infrastructure? Explain it.

Q6°) Get a look at the function “dns” in TP5/main.py. Can you tell if we can make ECS-DNS requests with the RIPE Atlas API?

Q7°) We now want to analyze the latency experienced by users for each of these browsers. Describe your methodology.

Q8°) Implement your methodology and analyze your results.

Q9°) If you are in advance, let me know, I have some more…