Global Traceroute

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http://www.globaltraceroute.com
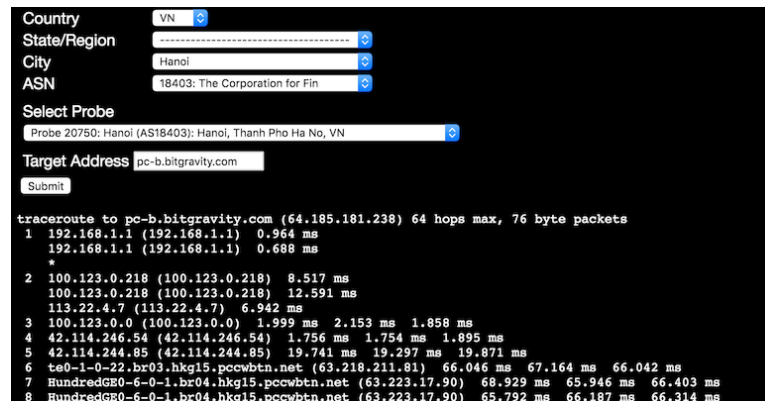
What is it?

- Front end to do traceroutes from RIPE Atlas probes
- Quick and easy traceroutes from most of the world's major end-user ISPs
- https://www.globaltraceroute.com
- RIPE Atlas is a dynamic, global network of thousands of probes that have been measuring Internet connectivity and reachability in near real time since 2010. Anyone can directly access the data collected by RIPE Atlas, as well as Internet maps, graphs, tools and analyses based on the aggregated results, at https://atlas.ripe.net. RIPE Atlas was developed and is operated by the RIPE NCC, along with the help of thousands of volunteers. The RIPE NCC is one of five Regional Internet Registries (RIRs) that support the global operation of the Internet.

Why?

- I do a lot of performance engineering.
- Questions that start out as, "why is performance bad for users in Country X?" turn into "why is an ISP in the Philippines sending us traffic in Las Vegas?"
- Information on inbound paths is really useful when troubleshooting, but hard to get
- Various measurement systems will tell about performance problems – measuring from your own systems or from an end-user perspective
- Flow analysis systems will tell you what path your outbound traffic is taking, but for inbound they only know what interface it came in on.
- Some performance monitoring systems even let you traceroute, but probes in datacenters don't represent end users well

Looking for solutions

- I've been looking for solutions to this for several years.
- Old standard was to ask end users for traceroutes. Only worked if the complaint came from an actual user, and even that was iffy.
- Provider looking glasses sometimes helped, if they had one
- Keynote allowed traceroutes from its probes. So did Thousand Eyes. Oops, not on the same networks as my users.
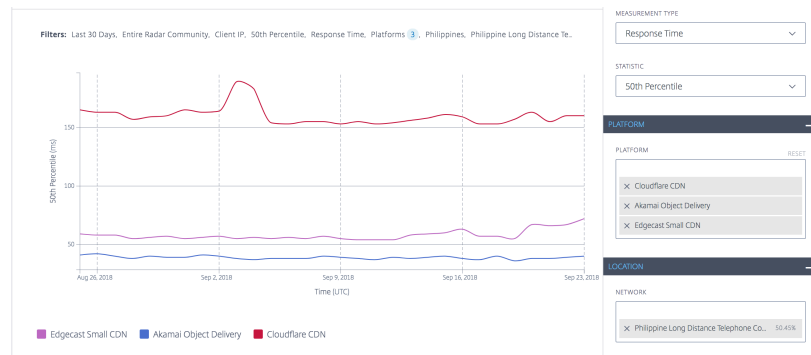- RIPE Atlas! Right locations! Looks like what I was looking for. But not designed for this.

Atlas process

- Atlas is a research system, not designed for on the fly troubleshooting
- Requires RIPE Atlas credits, only for probe hosts, sponsors, and RIPE members
- Create measurement. Intended to be ongoing and distributed, but you can measure from one location, and you can set measurement to one-time.
- Search by location or AS, but not easily by both.
- Not a real time system. Won't automatically display results for you.
- Come back when it's done and read it.
- This worked, but it was cumbersome enough that I didn't use it unless I was desperate.

Making it easy

- Atlas has an API

- Did my own location mapping, using Maxmind.

- Using Atlas requires credits. A request to a mailing list found a generous donor, so this didn't have to be for my own use anymore.

- Used API to create traceroutes, and request result repeatedly until it's ready.

- Results come as a big JSON blob. I reformat it into a traditional looking traceroute.

"What happens in Manilla stays in Vegas?"

- I no longer have a global network, so picking on Cloudflare and PLDT here

- Seeing an issue in a performance report

  - Performance report is from Cedexis, portal.cedexis.com
  - My favorite way to find problems, but they don't provide enough info to diagnose.

Troubleshooting via Global Traceroute

Troubleshooting via Global Traceroute

- Traffic is coming into Cloudflare in Las Vegas
  - Cloudflare probably has logs that show this
  - But, why???
  - Note: There may be legitimate traffic engineering reasons for this.
- Looking at the traceroute
  - PLDT has a connection to Telia in Las Vegas, as does Cloudflare
  - Tells Cloudflare that solution might involve keeping PLDT traffic off Telia

Thanks!

- Check it out
  - http://www.globaltraceroute.com
  - info@globaltraceroute.com or scg@gibbard.org for questions