NAT Revelio Update

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NAT Revelio

- We have developed a test suite to detect NAT444 (CGN) deployments in ISP networks
- Paper published at the Passive and Active Measurement Conference (PAM) 2016 describes the methodology
  - https://www.caida.org/publications/papers/2016/nat_revelio/
- Methodology overview presented at MBA collaborative meeting in December 2015

NAT Revelio on FCC-SamKnows

- Deployed NAT Revelio on the FCC SamKnows measurement platform in March 2016
- Deployment consisted of 2477 Whiteboxes in 23 ISPs
- NAT Revelio test suite was run over the course of 1 week: ~20 runs per Whitebox

Analyzing the Results

- We have analyzed test runs from each Whitebox
- Analysis produces an inference for each Whitebox: whether the WB is behind a CGN or not, and our confidence in the inference
- Confidence is based on which set of tests from the Revelio suite (UPnP, traceroute, access link detection) ran successfully and produced evidence of CGN deployment

Analyzing the Results

- We produced a detailed report for each ISP with the number of Whiteboxes that produced positive or negative results
- In case we inferred a Whitebox behind CGN, we included results of all the tests from that WB: UPnP, traceroute, access link detection
- We plan to share the detailed report for an ISP (only) with that ISP

Analyzing the Results

- We solicited contacts at ISPs participating in the MBA program
- We discussed positive CGN detections with the ISPs that responded. Feedback helped weed out some false positives in our method
- Need contacts at ISPs where we found no evidence of CGN deployment

ISPs where we need contacts

- **Brighthouse**
- **CableONE**
- **Cablevision**
- **CenturyLink**
- **Charter**
- **Cincinnati Bell**
- **Cox**
- **EarthLink**
- **Frontier**
- **Hawaiian Telecom**
- **Insight**
- **Mediacom**
- **Oceanic TWC**
- **Qwest**
- **RCN**
- **Verizon**
- **Wildblue/ViaSat**
- **Windstream**

IPv6?

- This work is conducted under an NSF-funded project to measure IPv6 adoption and factors affecting it
  - https://www.caida.org/funding/ipv6-adoption/

- Longitudinal data about IPv6 adoption and performance is important to all stakeholders

- Including IPv6 tests as part of regular MBA measurements would produce some very useful and timely data

Thanks!

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