Technical Quarterly Report –Oct 2021 - Dec 2021

BASIC PROGRAMMATIC DATA

Performer: University of Twente
Project: 628.001.031(NWO)
Mapping Domain DNS DDoS Vulnerabilities to Improve Protection and Prevention
Period of Performance (base): December 1, 2018 – November 30, 2022

PROJECT PROGRESS

Progress Against Planned Objectives:
Paper "Hosting Industry Centralization and Consolidation" accepted at NOMS2022.
Monthly conference calls between UT and CAIDA are taking place to discuss the project progress.

Technical Accomplishments this Period:

1. We performed a new anycast census (Oct 2021) using Manycast2.
2. We published the data in open access on: https://github.com/ut-dacs/Anycast-Census
3. Measurement for domain under attack are continuously running
4. Presented DNSAttackStream and DNSPadawan at DUST2021
5. Presented Characterization of Anycast Adoption in the DNS Authoritative at DNS OARC 36
6. First results of impacts of attacks on domain names operativity presented at DHS.

Improvements to Prototypes this Period: none
Significant Changes to Technical Approach to Date: none
Deliverables: none
Technology Transition and Transfer this Period: none
Publications this Period:

- Hosting Industry Centralization and Consolidation (NOMS 2022) - Accepted

Meetings and Presentations this Period: DNS OARC 36
(https://indico.dns-oarc.net/event/40/contributions/870/attachments/851/1545/OARC-Anycast.pdf)
Issues or Concerns: none

PROJECT PLANS

Planned Activities for Year 4:

- Using the data provided by OpenINTEL and combining it with other sources UT will identify the impact of DDoS attacks against DNS.
- The impact of DDoS attacks will be evaluated to compare the efficacy of different resilience techniques implemented in the DNS ecosystem.
- UT and CAIDA will provide actionable recommendations for DNS operators.

Specific Objectives for Next Period:
UT and CAIDA will start to analyze the results from reactive measurements on nameservers under attack.