48hrs after the 1st BGP Hackathon

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BGP HACKATHON 2016
https://www.caida.org/workshops/bgp-hackathon/1602/

• 6-7 February 2016 (weekend before NANOG 66)
• San Diego Supercomputer Center, UC San Diego
• Theme: live BGP measurements and monitoring
• 90 Attendees
  - 50 competing participants
    - 30 graduate students
  - 25 non-competing experts
  - Mix of Academia, Industry, Institutions
  - 15 teams!
ORGANIZERS & PLATFORMS

github.com/CAIDA/bgp-hackathon/wiki/Platforms-Documentation

- **Stable and experimental data sources**
  - MRT files from RIPE RIS, Route Views
    - Also streamed through BGPStream
  - Cassandra Cluster - BGPMON
  - Kafka live feeds
    - json from new experimental RIPE RIS
    - BMP from Route Views, Cisco, Randy Bush

- **Testbed** emulating ASes on the actual Internet - PEERING

- **Software framework** for BGP monitoring and data analysis - BGPStream

- Unified Interface to **Looking Glasses** - PERISCOPE

- **Active Probing** infrastructure
  - RIPE Atlas, CAIDA Ark

- **Comet Supercomputer**
  - 1944 compute nodes. Each: 24 CPUs, 128GB RAM
SPONSORS

THANK YOU!
MANDATORY PIC OF FOLKS WITH LAPTOPS LOCKED IN A ROOM
MEASUREMENT/MONITORING...
...IS CHALLENGING
VIZ-2

TEAM
1. Massimo Candela, RIPE NCC
2. Maite Gonzalez, Universidad de Chile
3. Saif Hasan, Facebook
4. Francesco Benedetto, Roma Tre University

• Easily deployable BGPlay installation
• Data collector for *private* and public BGP data
• Real-time streaming and visualization
HIJACKS-2

TEAM
1. Ruwaifa Anwar, Stony Brook University, New York
2. Danilo Cicalese, Telecom ParisTech
3. Nicolas Vivet, FNISA
4. Kaname Nishizuka, NTT Communications
5. Danilo Giordano, Politecnico di Torino
6. Charles Brock, ICASA / NMT
7. Bruno Machado, Universidade Federal de Minas Gerais

- MOAS and “SubMOAS” detection
- Implemented new rules to filter out benign cases
- Used CAIDA BMP, RIPE RIS stream and PEERING
- Monitor on control plane and data plane
- Open source project available at github: https://github.com/CAIDA/bgp-hackaton/tree/Hijacks-2

![Diagram showing HIJACKS-2 functionalities]

- MOAS and SubMOAS detection
- 6 distinct filters (= 60%):
  1. RPKI covered
  2. Route object covered
  3. Private ASs
  4. ASs belonging to the same organization
  5. ASs with business relationships
  6. Customer cone

- AS Path before/after the hijacking
- Future work: AS announcements geolocation
BGPStream-1

• Improved filtering / usability for BGPStream
• Created BPF-style language for describing filters
  • “project ris and collector rrc03 and prefix exact 205.107.140.0/24”
  • One CLI option, one API call
• New element properties to filter on
  • Element type, IP version, exact prefix match, less specific prefix
  • AS Path (using regular expressions)
• Add new method for specifying time period
  • “3 h” = give me the last three hours
  • “15 m” = give me the last 15 minutes
ANYCAST-1

- Used the PEERING testbed to emulate a service that uses anycast
- Set up 7 muxes for the chosen prefix
- Used RIPE atlas probes to repeatedly traceroute to the prefix from different geographic locations
- Then, announced this prefix from the muxes. Waited for a while and then after sometimes terminated the most popular mutex.
- Used both traceroutes and a BGP RIPE collectors (looking glasses) to monitor the changes.

TEAM
1. Ricardo Schmidt, University of Twente
2. Wouter de Vries, University of Twente
3. Azzam Alsudais, CU Boulder
4. Roya Ensaﬁ, Princeton University
5. Nick Wolff, OARnet
REPORTS ETC. WILL FOLLOW

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