48hrs after the 1st BGP Hackathon

Alberto Dainotti
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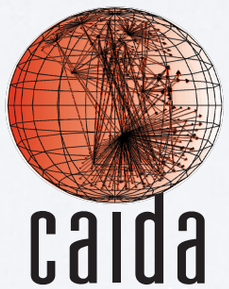

Center for Applied Internet Data Analysis
University of California, San Diego

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!

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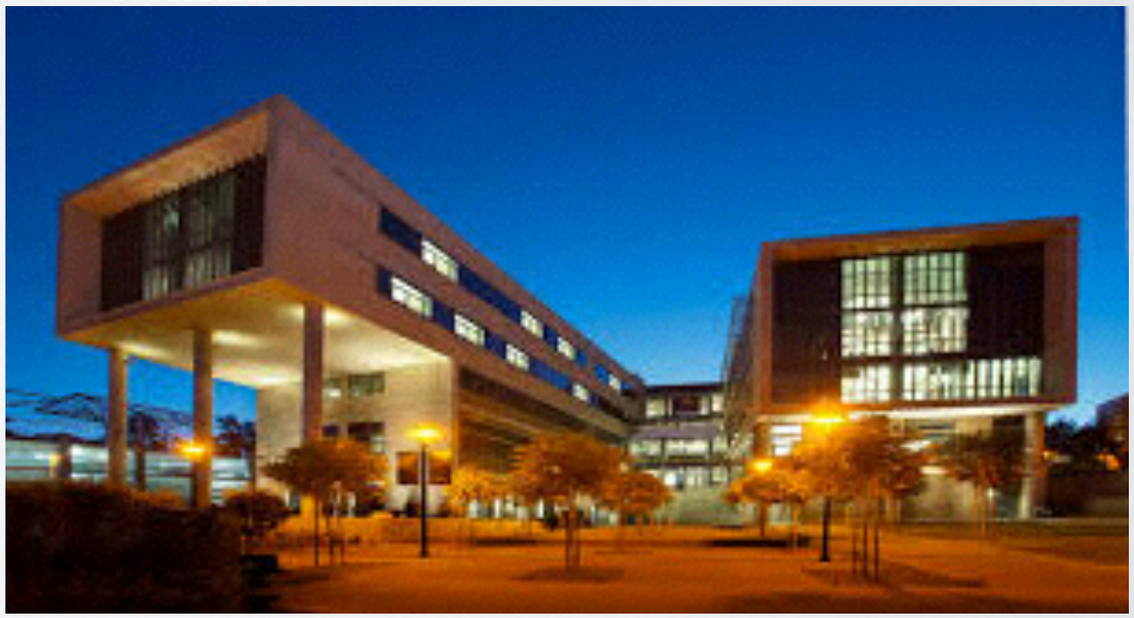
SDSC SAN DIEGO SUPERCOMPUTER CENTER



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

USC University of Southern California

FORTH Foundation for Research & Technology, Hellas

UC San Diego

BGPmon

UFMG Universidade Federal de Minas Gerais

Route Views 6447

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RIPE NCC

SDSC San Diego Supercomputer Center

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THANK YOU!

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MANDATORY PIC OF FOLKS WITH LAPTOPS LOCKED IN A ROOM

MEASUREMENT/MONITORING…

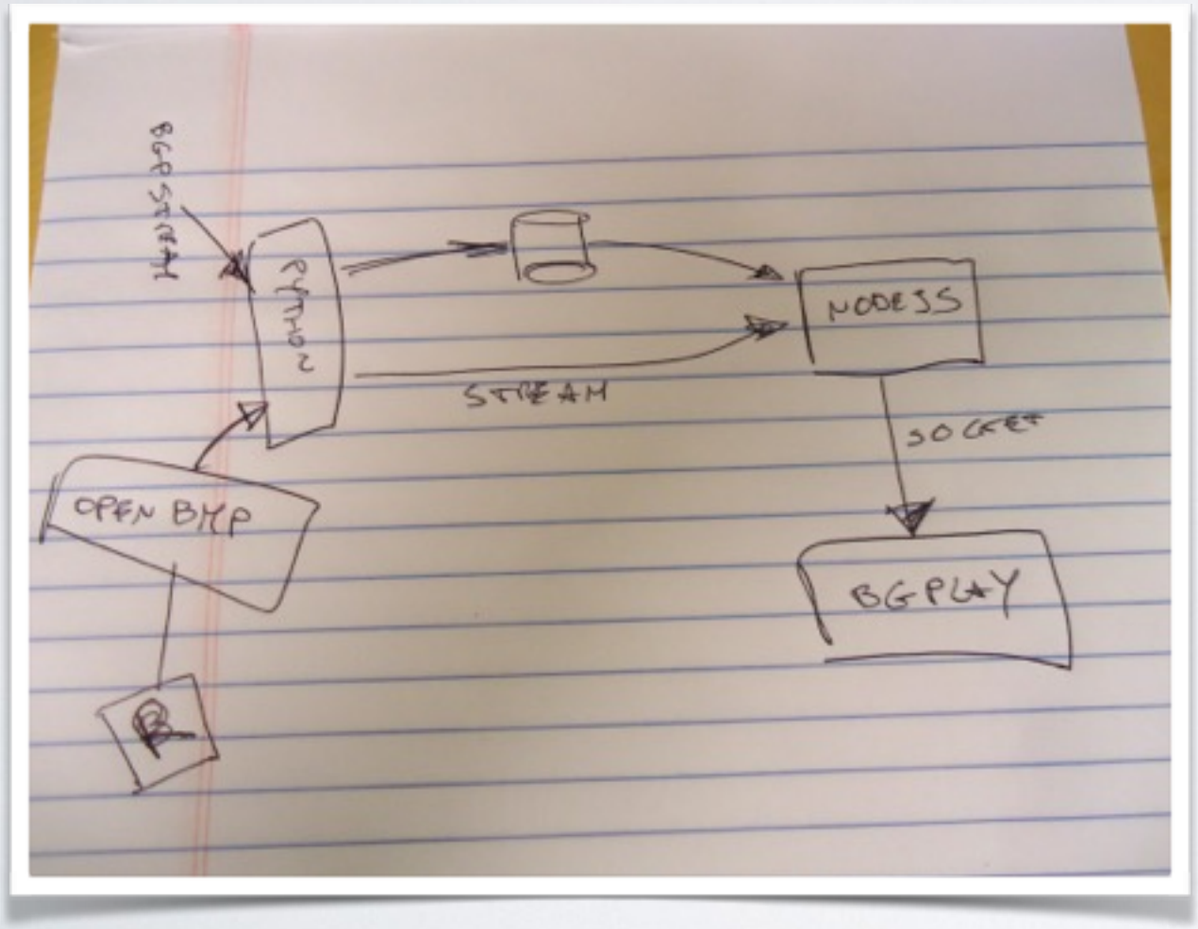
…IS CHALLENGING

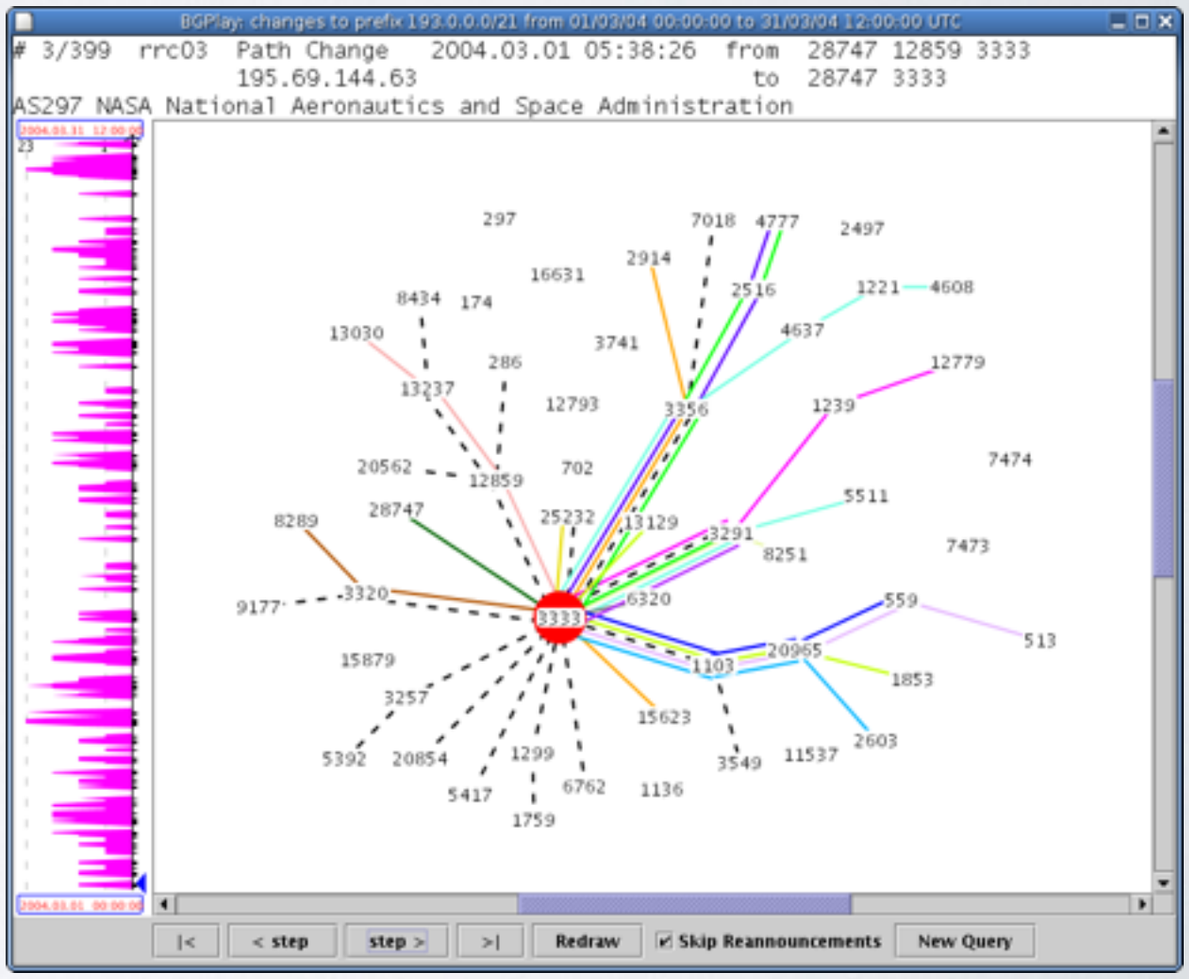
VIZ-2

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



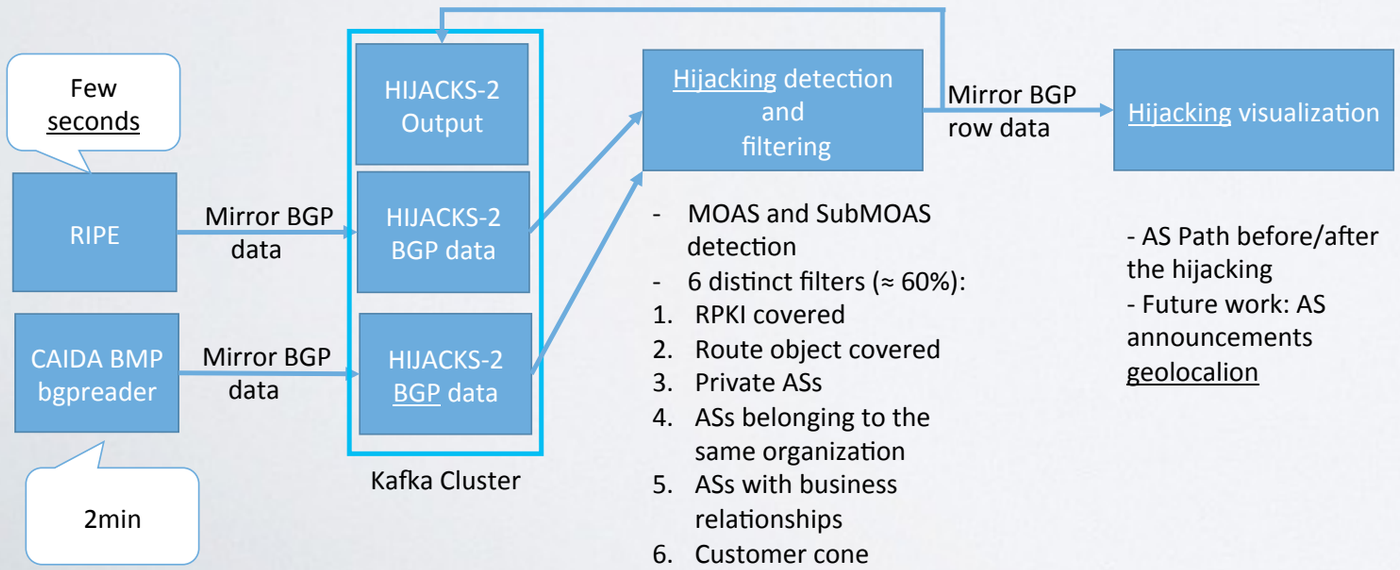


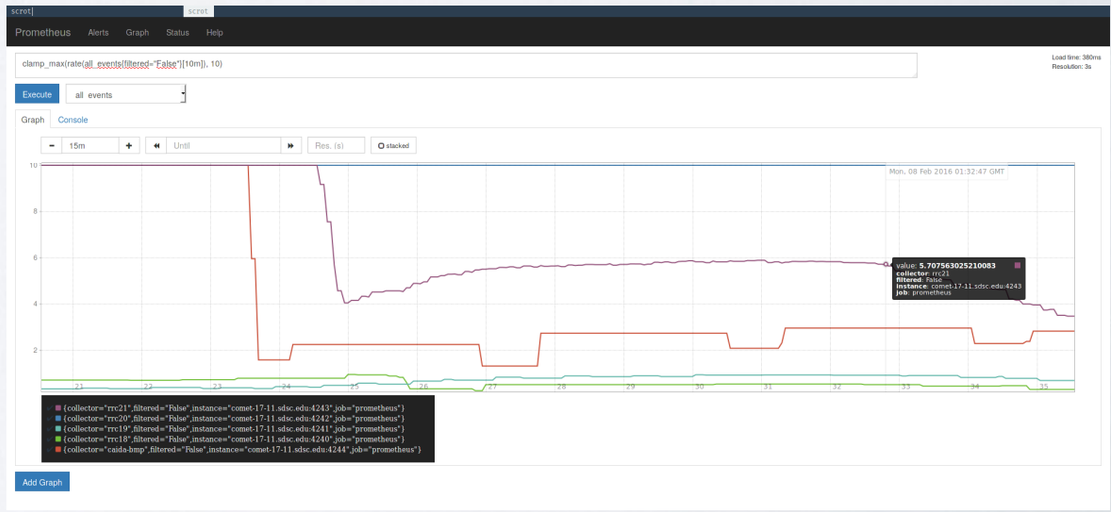
HIJACKS-2

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





BGPSTREAM-1

TEAM
Shane Alcock, University of Waikato

BGPStream-1

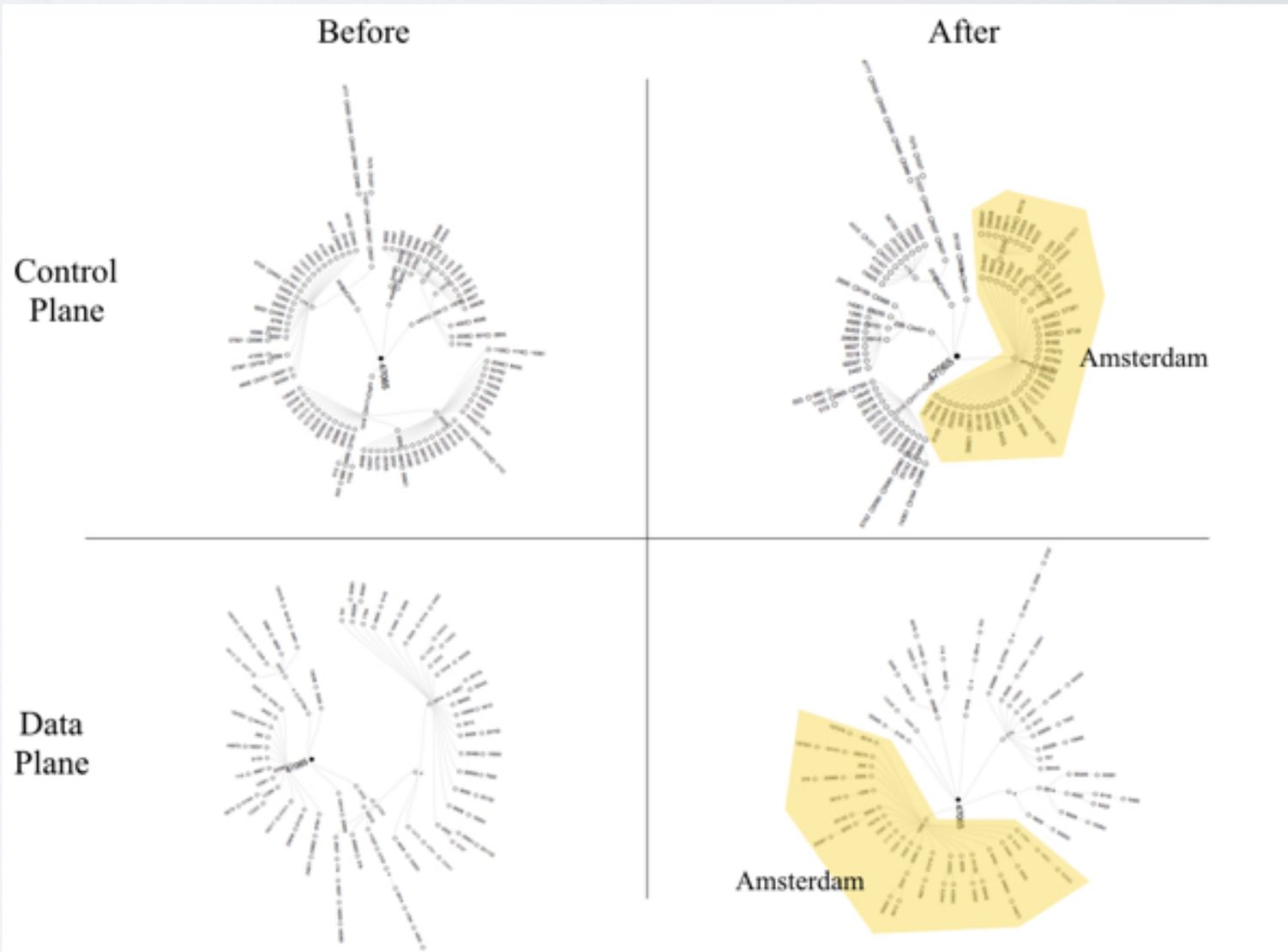
- Improved filtering / usability for BGPStream
- Created BPF-style language for describing filters
  - “project ris and collector rrc03 and prefix exact 205.107.140.0/24”
  - One CLI option, one API call
- New element properties to filter on
  - Element type, IP version, exact prefix match, less specific 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

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

- 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.



REPORTS ETC. WILL FOLLOW

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