

CAIDA/Routeviews Retreat Agenda

Purpose: Coordinate projects, and discuss pressing topics.

Attendees:

1. Steve Huter
2. Hervey Allen
3. Hans Kuhn
4. Greg Shepherd
5. Matthew Luckie
6. kc claffy
7. Bradley Huffaker
8. John Kemp
9. Thomas Krenc
10. David Clark
11. Dan Andersen
12. Elena Yulaeva
13. Philip Smith

Tuesday, Jan 24

Time (PST)	Description	Outcome
9a	"What did I learn from yesterday?" GMI project: vision, goals, stats, challenges	<ul style="list-style-type: none">- need more insight on research and how it relates to e.g., Greg's work- need to connect dots: what are key objectives for 2023. Roadmap- "feel like python digesting meal" ACTION: kc to redo intro slides to make clearer what we've done and how it maps to improvements in security. Dataset by dataset.
10am	Talk: Thomas Krenc - BGP2Go, "MVP ON RouteViews" (Most Valuable Vantage Points)	Demo of BGP metadata database: believe it is future way of obtaining routviews data. ACTION: estimate amount of redundancy across VPs ACTION: establish plan for maintaining database and integrating other source of data.
11a	future trajectories for GMI(+RV): 5-10 year plans	
12p	"Meet the EU Researchers" : Zoom call with Cristel's group, currently using scamper-routeviews to get O(700) VPs for traceroute measurements.	Open question: If we could put Collector anywhere - Where should it be? Kemp: very interested in outcome of this analysis, surprised that peers aren't dropping the packets with "wrong" (transit) source IP ACTION: need MOU to get permission to do these measurements. Current agreement is no traffic outbound. ACTION: (CAIDA): find Giotsas paper investigating addpath from HE?

13:55	RouteViews project: vision, goals, stats, challenges (5 mo, 12 mo)	<p>Hans</p> <p><u>Vision</u></p> <p>Group effort to decide on this We did this towards the end of the day...</p> <p>VIP Zone is one possible vision where RouteViews could play a key part of this role.</p> <p>If we propose something like a VIP zone, what does the BGP analysis data look like?</p> <p>ACTION: Finish and submit peer reviewed paper on VIPzone</p> <p>Data oriented framework that leaves to measurable improvement in routing security.</p> <p>Taking the routing community to the next level with things like active measurement,</p> <p>Part of our vision (Dave) - Keep the academic as a viable element, understanding the character of the internet.</p> <p>Is academics part of the understanding of the internet from a security goal vs. government and large business. EU commission goal to make sure things are set up so that academics can continue to be part of this process - security of the internet.</p> <p>US Government (Solarium Commission) function to provide internet statistics for understanding security. And, it's all voluntary. From a bureau of cyberstatistics.</p> <p>Data government would get data from items bought from industry or given (voluntary). Academics could take a leave of absence to join in on this effort.</p> <p>US Government proposal is quite different from EU commission.</p>
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Hans - Our vision should recognize that the existing mission continues. But, to become part of potential security projects, how does RouteViews fit in to this. What does that look like in a vision statement.

“Enable academic researchers to continue to play a role in the advancing of security of the Internet”

Goals

1. Building a modern, standardized collector platform that can field new services:
 - Foundation for all new services.
2. Stable, scalable, funded operations requiring fewer FTE to support.
3. Class A Customer Service:
 - Formalized ticketing system, replies to requests
4. Understand what our researchers and operators want:
 - Outreach through NOGs and meetings
 - Public outreach component
 - Value proposition story (why community wants to participate and support)
5. Start building the new services that researchers and operators want.

Stats

1. 600 ASes
2. 1,000'ish peerings (v4/v6)
3. 33'ish collectors

Challenges

1. Staffing
2. Funding
3. Reputational List

		<ol style="list-style-type: none"> 4. Incomplete Documentation 5. Out of Band 6. Security 7. MOUs with Collectors
2p	<p>Future trajectories for GMI/RV: VIPzone talk Q&A on first part of VIPzone talk Alternatives: BGPSEC, MANRS+, ASPA</p> <p>RV: licensing / commercial use</p> <p>Alternative projects doing similar</p> <ul style="list-style-type: none"> • RIPE RIS • Bgp.tools • Catchpoint/commercial 	<p>BGPSEC. If we put crypto hardware in the routers, this would be doable...</p> <p>BGPSEC - Built in key is an operational concern to David. If the key is lost... This is a nightmare.</p> <ul style="list-style-type: none"> - Have not seen true key management discussion <p><u>Comments from the Zoom Chat</u></p> <p>Philip Smith:</p> <ul style="list-style-type: none"> • Given BGP communities are intended for intra-AS use, or for use between directly connected EBGp peers, how are we going to enforce the propagation of community values across the Internet, when best practices for the last 25 years has been to NOT do this. <p>Philip Smith</p> <ul style="list-style-type: none"> • And how to enforce comparison of community values to check for the Verified one? If this is left to operator policy, how to ensure? If automatic, then that's a major change to the BGP Path selection process (and there were howls of protest with Cisco's ROV valid taking priority over ROV anything else in the BGP path selection process, which is totally non-standard) <p>Philip Smith:</p> <ul style="list-style-type: none"> • And we are now telling ISPs that their traffic engineering has to stay in the zone, rather than economics or performance? As soon as traffic

		<p>goes out of Zone, we lose the community values for a non-participating player.</p> <p>Philip Smith:</p> <ul style="list-style-type: none"> • This is why there is a huge amount of work going into ASPA ;-) <p>KC:</p> <ul style="list-style-type: none"> • https://datatracker.ietf.org/doc/draft-ietf-idr-route-leak-detection-mitigation/ <p>Philip Smith:</p> <ul style="list-style-type: none"> • Long expired... hmmm “transitive BGP community” - no such thing really... and what happens when someone sets one maliciously? • The misuse of “no-export” is bad enough, and that was an auto-drop in neighbouring AS - was abused for toll bypass here in Australia (Telstra vs Optus) <p><u>Comments</u></p> <p>Sticker from MANRS process...</p> <ul style="list-style-type: none"> - What happens as most do not actually implement what is represented. No conformance testing.
		<p>Pushing forward - Do the top 4 tiers check their customers and share that information among themselves?</p> <p>US R&E doing the same. There are several on top of just I2.</p> <p>Across precise coordination among communities</p>

		<p>Transition using a “government stick” - Route Origin Validation... so hard with top tiers.</p> <p><u>Methods for Detection and Mitigation of BGP Route Leaks</u></p> <p>https://datatracker.ietf.org/doc/html/draft-ietf-grow-route-leak-detection-mitigation-07</p>
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Wednesday, Jan 25

Time (PST)	Description	Outcome
10a	<p>continue: What do we need for Implementation Proposal</p> <p>How far are we from there? Alternative Paths</p> <ul style="list-style-type: none"> ● data types: <ul style="list-style-type: none"> ○ Traffic ○ Telescope ○ BGP ○ DNS ○ Certificates ● deployments: hardware, software ● academic partners and roles ● ● industry partners and roles 	<p><u>General Comments</u></p> <ul style="list-style-type: none"> ● How does industry play in all this (Steve)? ● Rank ordering of what to do (Brad)? ● Add path BGP... Continue to determine, do we continue to chase? <ul style="list-style-type: none"> ○ Industry does not appear to be interested - or would prefer it to not be added. ● Visibly clear improvements in routing security and DNS among GMS and ISLANDS projects as an outcome. <ul style="list-style-type: none"> ○ RouteViews tooling to make it easier to view hijacking cases. Possible now, but harder to use. Improvements for routing infrastructure as a goal. ● Enabling security research to address collection of data to improve security. For industry, law enforcement, government and R&E.

		<ul style="list-style-type: none"> • Brad commented, “You’ve been going on just fine for a long time. 1000 papers.” <p>Hans’ goal for “this year” are what KC sees as the most important things to get done.</p> <p><u>Goals (Hans ;-)</u></p> <p>Updated from Tuesday with what Hans had put in to Mattermost GMI-RouteViews channel.</p> <ol style="list-style-type: none"> 1. Building a modern, standardized collector platform that can field new services (python3, docker, modern crypto): <ul style="list-style-type: none"> ○ Monitoring and alerting ○ Foundation for all new services. 2. Stable, scalable, funded operations requiring fewer FTE to support. 3. Class A Customer Service: <ul style="list-style-type: none"> ○ Formalized ticketing system, replies to requests 4. Understand what our researchers and operators want: <ul style="list-style-type: none"> ○ Outreach through presentations at NOGs and other meetings (APRICOT / BKNIX / etc.) ○ Public outreach component ○ Value proposition story (why community wants to participate and support) 5. Start building the new services that that meets t the needs of operators and researchers today.
11a	<p>What we learned from SAC call that has implications for Implementation Proposal.</p> <p>What Do we need for Implementation Proposal – deployments hardware, software</p>	<p>What we learned</p> <p>KC gave an update from meeting notes.</p> <p>https://www.caida.org/funding/msri-gmi3s/reports/</p>

	<ul style="list-style-type: none"> - academic partners and roles - industry partners and roles 	<p>SAC_meeting_notes_2023_01_20.pdf</p> <p>Username: reviewer; Password: MSR1-view-m1-m36</p>
END	Next meeting around Q4? February?	Depending on where we are, consider retreat with a workshop, or something like that.

Tuesday, Jan 31 RV/CAIDA call

Overview of the future of Routeviews	<ul style="list-style-type: none"> - Kc is skeptical about University as a home (cost structure might be prohibitive) - Its harder to recruit in South Cal due to CoL - Takeaway: Fulltime staff needed to own routeviews
How is peering going? (All)	<ul style="list-style-type: none"> - Going to update the workflow to only take in peering additions via github workflow (next week) - Continue with current process for now <ul style="list-style-type: none"> - Mixed of email and issues - Takeway: Review process to consolidate to a single source of truth next week
Update on mrtsystemd, and iptables on kafka (Kemp)	<ul style="list-style-type: none"> - Finish conversion in about a week
Updates from Hans - disabled services on asnums (mdns, qpcidd,),cleaned up RV website so only Route Views, only https, removed stale maintenance notices, posted announcement on frf and telnet policy, website is a bit stale, need to circle back to fastly on	<ul style="list-style-type: none"> - Disabled several servers on dns servers to improve security posture - normalized 42 org names RouteViews - Removed all maintenance notices - Reviewed collectors and marked status - Fastly wants to peer with RouteViews (very interested) - Review locations and continue email (Kuhn)
Update on BQ (Greg)	

FRR scaling discussion - (Kemp, Greg)	<ul style="list-style-type: none"> - Profiling data on current process (?) - Trackdown everyone who is connecting to Routeviews (?) / maybe CAIDA staffer / nex
Document BMP users, develop MOU for collector hosts (Greg)	
Architecture (Greg)	
What are people doing for the next week (Bradley)	<ul style="list-style-type: none"> - Going to review acts we need to do (kc)
Weekly time slot	<ul style="list-style-type: none"> - Tue 11 (1 hour) wed 4 (30 min) starting next week