Improving the Accuracy of Routing Registry Data

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Summary

- In this talk we describe an ongoing project that attempts to address the issue of routing registry data accuracy by not only providing users with simple consistency checks on their registered data, but also integrates information from live BGP routing tables.
- If we allow users to view anomalies in routing registry data and actual routed information in a unified framework that also lets them easily modify the routing registry information, users will finally have both the information and the easy to use tools to help keep their routing registry data updated.

Current Routing Registry Operation

- Mostly based on IRRd software
- Goal of routing registry is to make prefix policy information publicly available to the entire Internet community via a simple whois query interface
- Registered objects are in RPSL format
- Two step process
 - Create maintainer account
 - Register objects that describe routing policy
- Updates to registry objects
 - Via email
 - Via website
- Little or no feedback to user during the process other than error reporting
- No relationship between registered data and routed prefixes

RADB-ng Project

- Provide a portal based route object maintenance framework
 - Easy way to add/delete/modify registry objects
 - Easy way to examine currently registered information
 - Provide at-a-glance summary information
 - Provide feedback on registry objects that are inconsistent
 - Provide feedback on inconsistencies between routing registry and routing table information

Registry Internal Consistency Checks

- List of all route objects that do not have a matching aut-num object - Missing aut-num objects
- List of all prefixes that have multiple associated route objects

Internet Routing Consistency Checks

- Use Internet Routing Table to generate:
 - List of all announced routes
 - List of all announced objects
 - List of all unannouned objects
 - List of all unregistered routes
- Use a modified bgp peering session to perform a check on each update message and determine if the originAS is different from the originAS in the routing registry.
 - Alerts are sent to RADB-ng system where they are made available to the affected user

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| bject Mana | igement | Object Information Consistence | cy Check Alerts | |
| – Maintainer ID: MAI | | | | |
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| Registered Object Summa | iry: | Total Number of Objects: 130 | | |
| ROUTE | 121 | AUT-NUM | 9 | |
| AS-SET | 0 | ROUTE6 | 0 | |
| ROUTE-SET | 0 | RTR-SET | 0 | |
| FILTER-SET | 0 | ROLE | 0 | |
| INET-RTR | 0 | PEERING-SET | 0 | |
| PERSON | 0 | KEY-CERT | 0 | |
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| Change Registered Object | Add Object | Selected Object Information | | |
| | Select route | route: 209.67.68.128/25 | | |
| | Select aut-num | descr: Overture SW1 space origin: AS14781 | | |
| O AUT-NUM | | remarks: For YSM deployment in Seattle | Delete Object | |
| 🔵 AS-SET 📃 🔪 | Select as-set | notify: network@yahoo-inc.com mnt-by: MAINT-YAHOO | Edit Object | |
| AS-SET | Select route6 | changed: mpetach@yahoo-inc.com | | |
| ROUTE6 | | | | |
| ROUTE6 | | 20050628 | | |
| ROUTE6 ROUTE-SET | Select route-set | 20050628 source: RADB | | |
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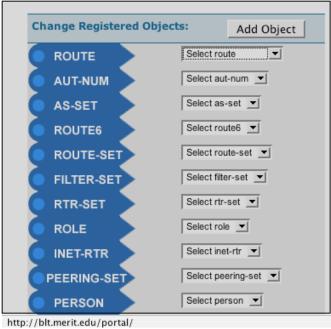
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| AS-SET | Select as-set | remarks: For YSM deployment in Seattle notify: network@yahoo-inc.com mnt-by: MAINT-YAHOO | Delete Object Edit Object |
| | Select route6 | changed: mpetach@yahoo-inc.com 20050628 | |
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| AS-SET | 0 | ROUTE6 | 0 |
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| Timestamp: | Prefix: | AS in routing Table: | AS in RADB: | | |
| 2008-10-09 21:04:13 | 64.35.224.0/19 | 174 | 701 | | |
| 2008-10-09 21:27:15 | 208.252.214.0/24 | 174 | 701 | | |
| 2008-10-09 22:55:06 | 149.137.0.0/16 | 174 | 701 | | |
| 2008-10-10 01:41:43 | 192.158.254.0/24 | 174 | 701 | | |
| 2008-10-10 04:37:25 | 156.73.0.0/16 | 174 | 701 | | |
| 2008-10-10 09:02:14 | 204.29.191.0/24 | 174 | 701 | | |
| 2008-10-10 11:19:55 | 24.32.66.0/24 | 174 | 701 | | |
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Conclusions

- We have developed an integrated framework that provides an easy to use interface to keep routing registry data current
- The new framework includes feedback from various consistency checks on registered objects and easy ways to correct any inconsistencies
- We have added the much needed missing link between live Internet Routing Data and Route Registry Information
- Please send email for a Beta Test account: mkarir@merit.edu