

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 unannounced 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



Object Management

Object Information

Consistency Check

Alerts

Maintainer ID: MAINT-YAHOO

Registered Object Summary:		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

Change Registered Objects:

- ROUTE
- AUT-NUM
- AS-SET
- ROUTE6
- ROUTE-SET
- FILTER-SET
- RTR-SET
- ROLE
- INET-RTR
- PEERING-SET
- PERSON

Selected Object Information

route: 209.67.68.128/25
 descr: Overture SW1 space
 origin: AS14781
 remarks: For YSM deployment in Seattle
 notify: network@yahoo-inc.com
 mnt-by: MAINT-YAHOO
 changed: mpetach@yahoo-inc.com
 20050628
 source: RADB



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Object Management

Consistency Check for Maintainer ID MAINT-YAHOO

AS Summary:

	Announced Routes	Unannounced Objects	Unregistered Routes	Announced Objects
AS22565	1			1
AS26085	1	1	12	
AS26101	4	1	3	3
AS36088	2	1		1
AS36229	1			1
AS36646	7	1	1	5
AS36647	7			3
AS36752	23	2	3	21
Others (missing aut-num):				
AS10228	8	8	1	17
AS17457	10	10	2	22
AS23880	0	0	12	12
AS42173	12	12	13	37

View/Edit Information:

- ANNOUNCED ROUTES
- UNANNOUNCED OBJECTS
- UNREGISTERED ROUTES
- MISSING AUT-NUM
- MULTIPLE ENTRIES
- ANNOUNCED OBJECTS

View Covering Route Object

Remove Unannounced Route Objects

Register Unregistered Routes

View Missing aut-num Routes

View Routes with Multiple Entries

View All Announced Objects

Selected Object Information

route: 66.94.224.0/20
 descr: Yahoo arin scd block
 origin: AS26101
 remarks: Yahoo duane block 2
 notify: netops@yahoo-inc.com
 mnt-by: MAINT-YAHOO
 changed: cstan@yahoo-inc.com 20030728
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Delete Object Edit Object



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Object Management

Maintainer ID: **MAINT-AS701** Logout

Prefix Hijack Alerts:

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

Misconfiguration Alerts:

Timestamp:	Prefix:	AS in routing Table:	AS in RADB:
2008-10-10 09:42:56	64.35.224.0/20	701	-1
2008-10-10 10:19:23	15.143.96.0/23	701	-1

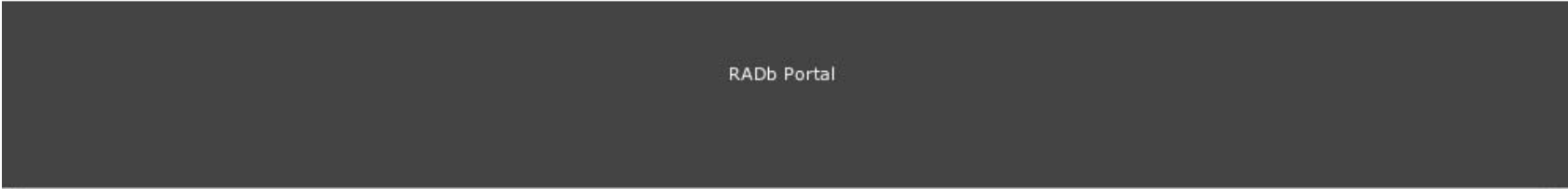


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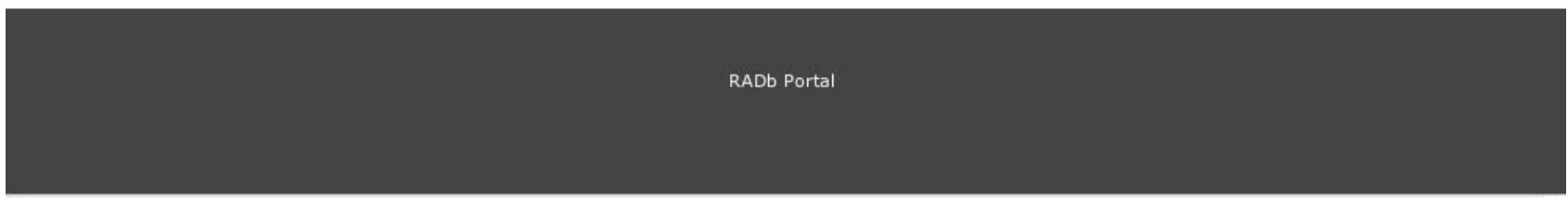
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Conclusions

- 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