

Routing Information Service or Where You Would Have Gone Yesterday ?

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Overview

- Motivation and goals of RIS
- Status
- Prototype
- Some interesting observations in the data
- Future developments

Motivation

- BGP:- trust everyone model
- BGP announcements originate from independent sources
- Follow back to origin from remote ends
- How routing would have been in the past
- Check policies in RR against reality on the Internet

Goals of the RIS

- Interactive query to database
 - Giant looking glass with history
 - Network reachability from other networks
- Provide raw data for
 - Reality checks, IRR/RC
 - to generate trend analysis
- Collect default free time-stamped BGP announcements between AS#
 - At several points on the internet
- Available to the Community



Possible Queries to RIS Database

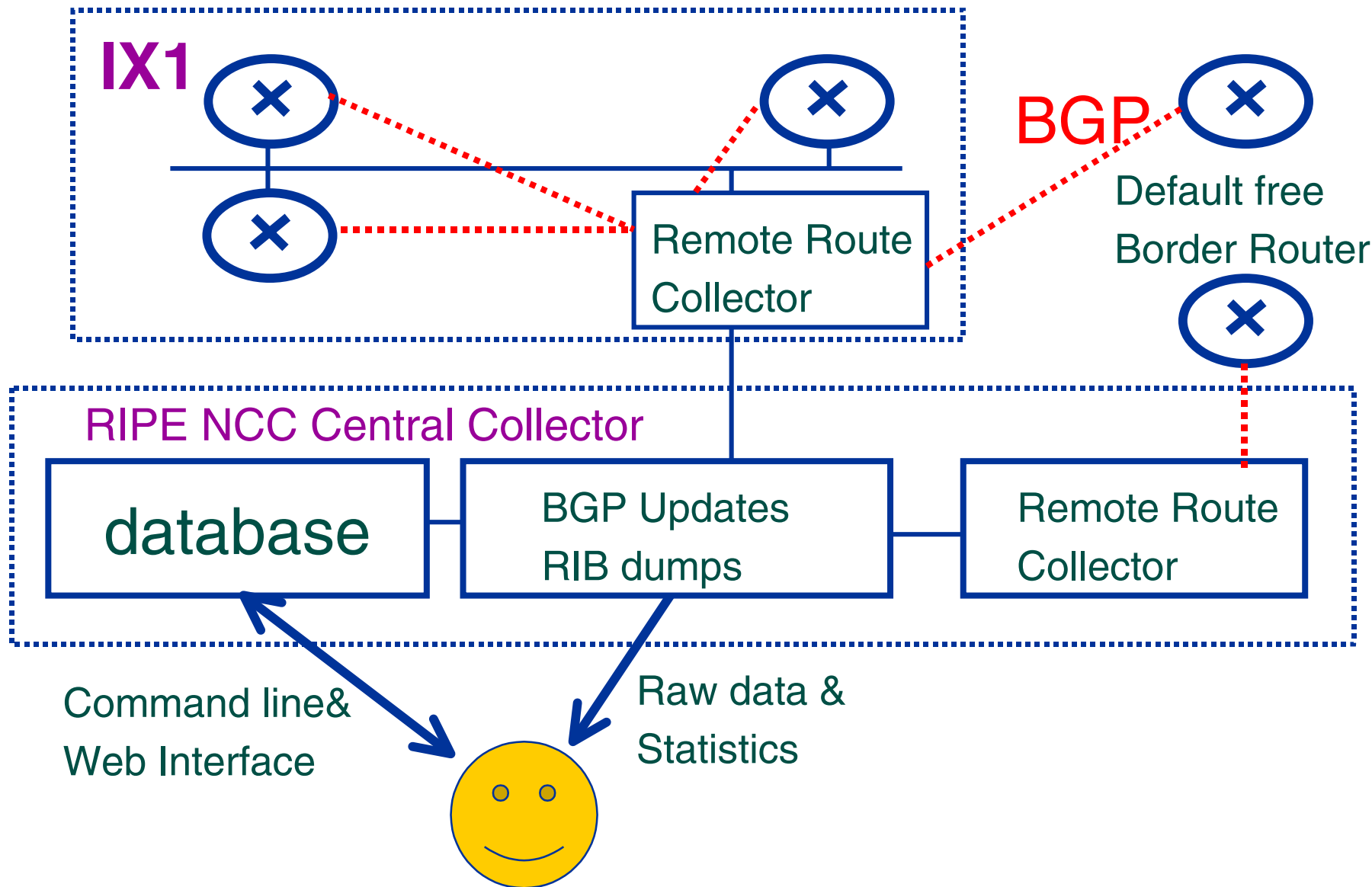
- Examples
- 193.0.0.0/22 updates since yesterday
- Prefixes originates from AS3333
- Who announced 193.0.0.0/22 yesterday
- Flap statistics of a Prefix/AS# for a period
-



Project Status

- Project started on July 01, 1999
- Design draft document (ripe-200) Oct 1999,
 - On the web site
- Setup first RRC Oct 1999
 - Currently has 10 peers.
- Feb 2000/RIPE 35
 - Prototype UI for β testing
 - Setup few more EBGP sessions with prototype
- May 2000/RIPE 36
 - Setup few more EBGP sessions with prototype
 - Add more features to UI based on feedback from β testers

Final Setup



Data Collection

- RRCs(**AS12654**) peer with all possible peers at IX
 - Few multi hop EBGP peering with remote border routers
- Up to 10 RRCs at Major IX's
- Up to 70 peers at each IX
- Each peer announces the whole routing table to RRC (about 70K prefixes)

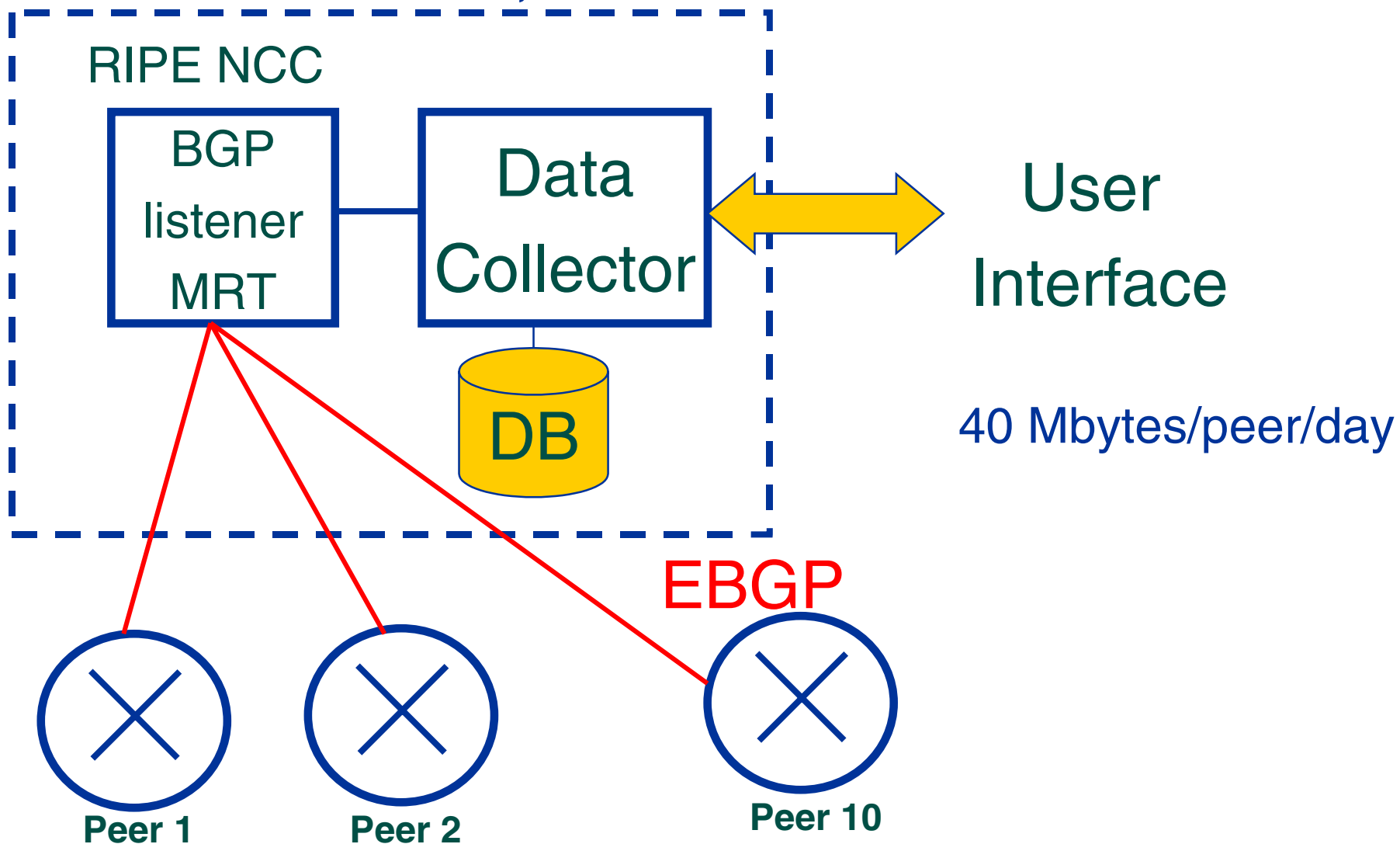


Remote Route Collector (RRC)

- BGP4 ipv4 announcements between AS
 - AS path & origin AS #
 - Route prefix and length
 - BGP attributes
 - Errors in the BGP announcements
- Snapshots of routing table 3/day
- RRC announce no routes to peers
- Forward no IP traffic to peers

Prototype Setup

8 AS's, 10 EBGP Peers




RIS Prototype Peers

Network	Location	AS #
EUnet	Amsterdam	AS286
CERN	Geneva	AS513
RIPE NCC	Amsterdam	AS3333
Frontier GlobalCenter	Sunnyvale, CA	AS3549 *
Frontier GlobalCenter	Herndon, VA	AS3549 *
APNIC	Australia	AS4608
APNIC	Japan	AS4777
Gigabell	Madrid	AS5409 *
Gigabell	Germany	AS5409 *
Frontier Globalcenter	London	AS8259

* Multiple Peers from same AS

Prototype User Interface

RIS Prototype Query - Netscape

 [homepage](#) | [what's new](#) | [whois db](#) | [search](#) | [site map](#) | [f.a.q.](#)

RIS prototype database. November 14, 1999 - January 20, 2000

Network Prefix a.b.c.d/p	<input type="text" value="193.0.0.0/22"/>	<input type="button" value="Search Network"/>
AS origin	<input type="text" value="3333"/>	<input type="button" value="Search AS#"/>
From	<input type="text" value="19991116"/> <input type="text" value="00"/> <input type="text" value="00"/> <input type="text" value="00"/>	
To	<input type="text" value="19991116"/> <input type="text" value="23"/> <input type="text" value="59"/> <input type="text" value="59"/>	
Type	<input checked="" type="radio"/> All <input type="radio"/> Announcements <input type="radio"/> Withdrawals	
Peer	<input type="text" value="Any"/>	



Output of Query

RIS Query result - Netscape



[homepage](#) | [what's new](#) | [whois db](#) | [search](#) | [site map](#) | [f.a.q.](#)

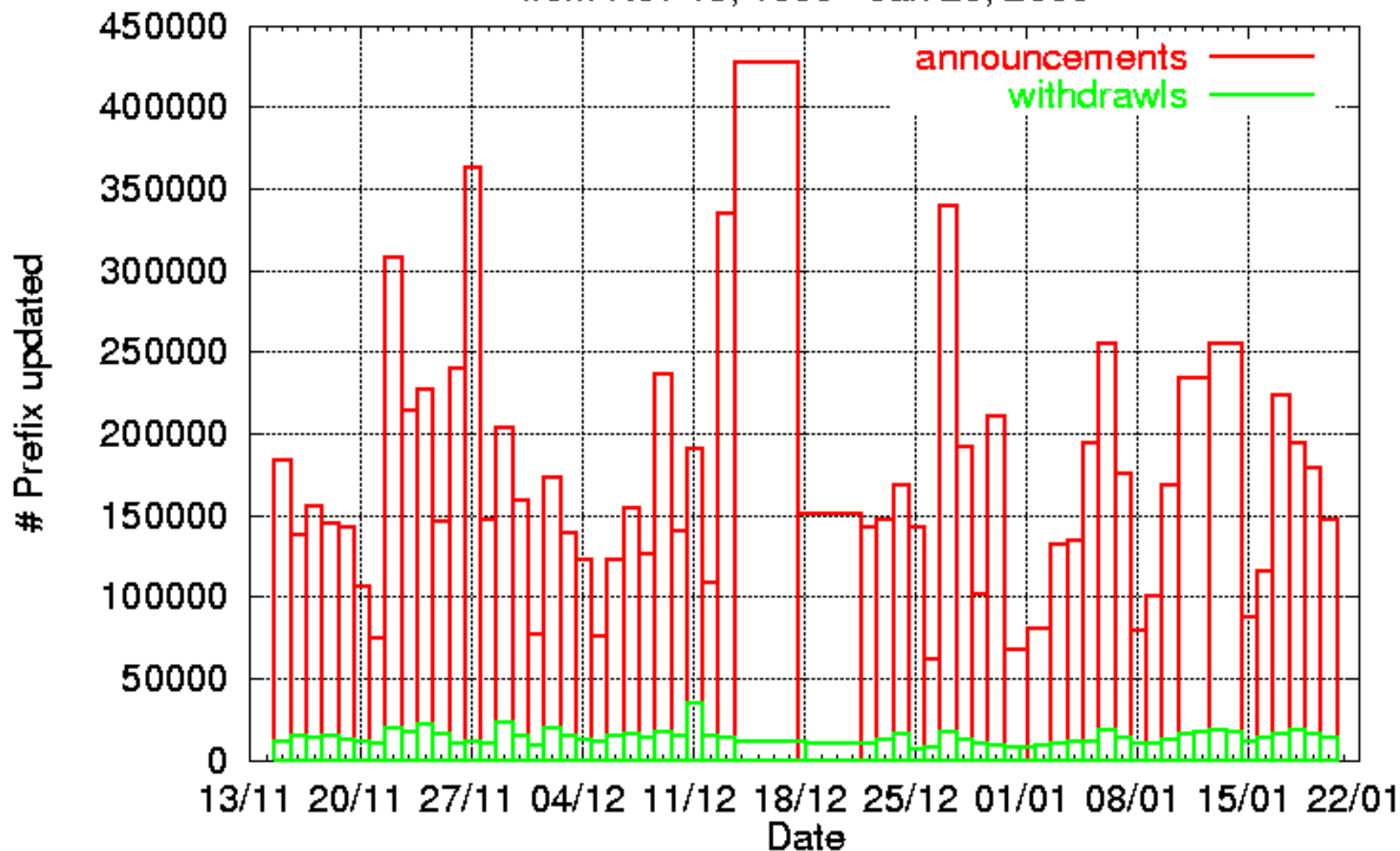
Routes from Loc-RIB dump on 19991117

Prefix	last update time	Peer	AS Path
193.0.0.0/22	1999-11-15 10:40:12	193.0.0.56	3333
193.0.0.0/22	1999-11-15 10:40:14	192.65.184.1	513 8933 1103 3333
193.0.0.0/22	1999-11-15 10:40:29	195.8.100.22	8259 3300 3333
193.0.0.0/22	1999-11-16 02:18:07	206.251.0.85	3549 286 3333
193.0.0.0/22	1999-11-16 06:37:22	204.152.166.29	3549 286 3333
193.0.0.0/22	1999-11-16 18:15:49	195.211.222.11	5409 5378 3333
193.0.0.0/22	1999-11-17 00:24:40	195.211.222.254	5409 5378 3333

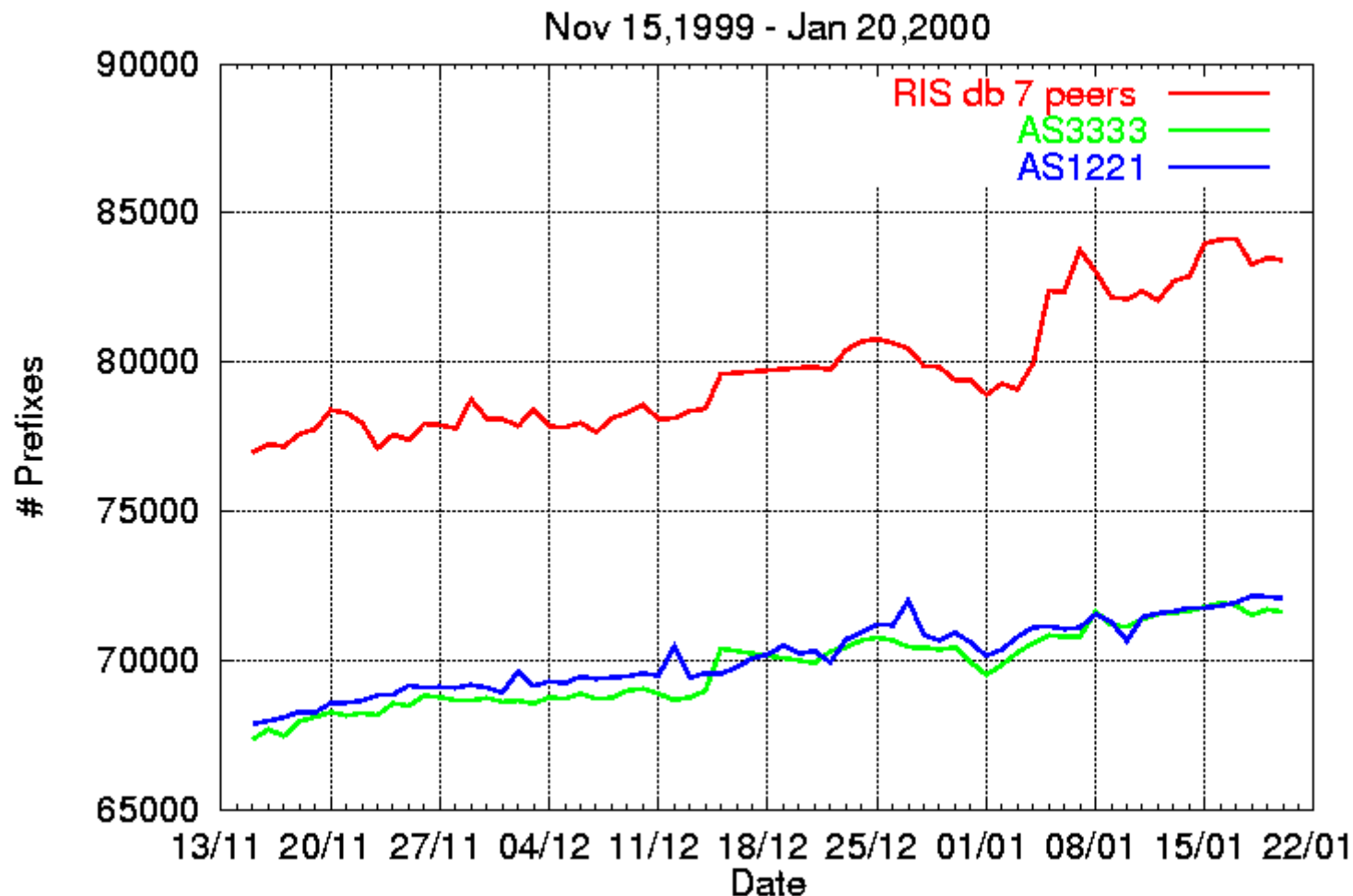
Type	Prefix	Time	Peer	AS Path
A	193.0.0.0/8	1999-11-17 13:18:36	193.0.0.56	3333 1103 6453 123
W	193.0.0.0/8	1999-11-17 13:18:38	204.152.166.29	
W	193.0.0.0/8	1999-11-17 13:19:01	206.251.0.85	
A	193.0.0.0/8	1999-11-17 13:19:04	195.211.222.11	5409 3352 6813 645
W	193.0.0.0/8	1999-11-17 13:19:09	195.8.100.22	
A	193.0.0.0/8	1999-11-17 13:19:20	193.0.0.56	3333 1103 6453 701

Updates Per Day

Average Prefix Updates of 7 Peers
from Nov 15, 1999 - Jan 20, 2000



Dark Prefixes in IPv4 Address Space ?

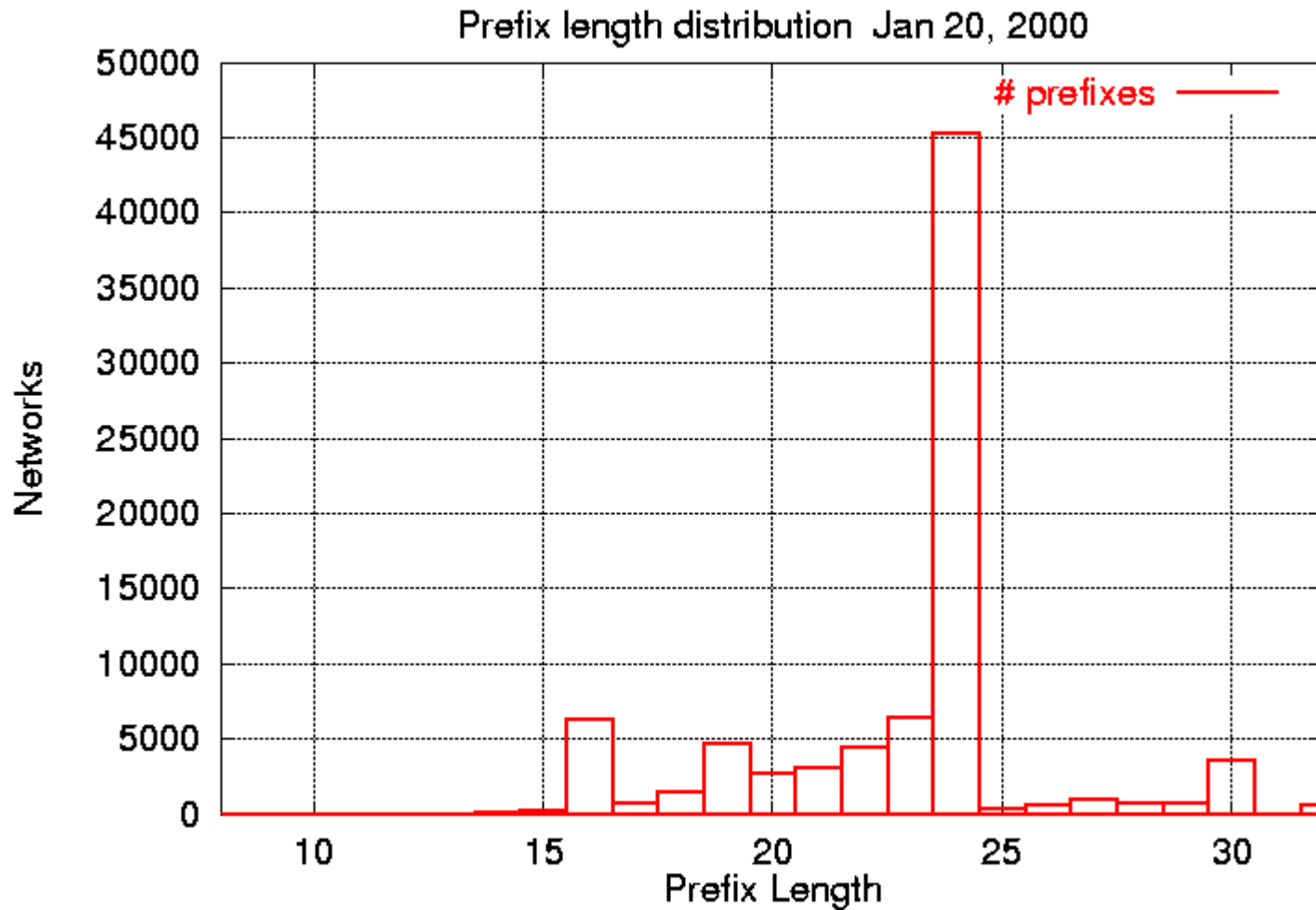


AS1221 Telstra <http://www.telstra.net/ops/bgptable.html>

AS3333 RIPE NCC



More than Half of Routing table /24s



Peering With RIS

- AS# AS12654
 - Will not announce any routes
 - Will not forward any traffic
 - Will accept any routes
 - Default free Peers announce all routes to RIS
- **Looking for few more EBGP peers**
 - **Contact A Antony <antony@ripe.net>**

Questions ?

- RIS home page
 - <http://www.ripe.net/ris/>
- Discussions & announcements
 - [<routing-wg@ripe.Net>](mailto:routing-wg@ripe.net)
 - <http://www.ripe.net/ripe/wg/routing/index.html>
- **Contact persons**
 - Antony Antony [<antony@ripe.net>](mailto:antony@ripe.net)
 - Henk Uijterwaal [<henk@ripe.net>](mailto:henk@ripe.net)



Conclusion

- Data Collection
- User Interface
- Interesting Results
- Peer with RIS