RIPE Address Policy Working Group

May 5, 2011
RIPE 62, Amsterdam

WG Chairs: Gert Döring, & Sander Steffann

please remember: this session is webcast

APWG overall Agenda

- A. administrative matters

- B. current policy topics in all regions, presentation

- D. on IPv6 Documentation Requirements

- E. feedback from the NCC Registration Services

- L. on IPv6 PI Policy

- M. discussion of open policy proposals - IPv6 related

- N. on (Address) Transfer Guidelines

- C. Document Cosmetic Surgeries Project - update

- T. discussion of open policy proposals - IPv4

- U. on IPv6 allocations and 6rd

APWG Agenda - Thursday

- A. administrative matters
  - thanking the scribe
  - approving the minutes from RIPE 61 (Rome)
  - agenda bashing

- B. current policy topics - Emilio Madaio

  - RIPE policy and PDP update

  - Worldwide Look by Topic

- D. On IPv6 Documentation Requirements - Marco Hogewoning

  - short presentation on the policy change 2010-06 and use of AGGREGATED-BY-LIR

- Y. Open Policy Hour

  - IPv4 Assignments to IXPs from the Last /8 - Andy Davidson / EIX WG

APWG Agenda - Thursday (2)

- E. Feedback from NCC Registration Services - Alex Le Heux

  – feedback from day-to-day NCC registration services work

  – bring up issues that the WG might not be aware of yet

  – ASN 32 assignments - global overview

  – planned implementation details for the "Last /8"

  – policy for upgrading "initial /32 IPv6 allocation" assigned to large carriers to "something that is large enough for their needs"

  – typical IPv6 PI discussions between RIPE members and the NCC RS – "this is where the sore spots are"

- *coffee break*

APWG Agenda - Thursday (3)

- L. On IPv6 Policy - Gert Döring, WG Chair
  - explanation of the genesis of the current IPv6 PA/PI policies
  - proposal how to re-do the IPv6 allocation framework
  - discussion!

- M. discussion of open policy proposals, IPv6 related
  - 2011-02 - Removal of multihomed requirement for IPv6 PI

- N. On Transfer Guidelines - Dave Wilson
  - bringing non-obvious problems with transfers into the open
  - collect feedback, funnel into RIPE BCP document

- *lunch break, end of thursday's APWG meeting*

APWG Agenda - Friday

- welcome back

- C. document cosmetic surgeries project - Emilio Madaio
  - update on current status
  - how to go forward?

- T. discussion of open policy proposals
  - 2006-05 IPv4 PI Assignment Size (WG Chair)
  - 2010-01 Temporary Internet Number Policies (WG Chair)
  - 2008-08 Initial Certification Policy for PA Space Holders (WG chair - version 4 update, status)
  - 2011-01 global policy for post exhaustion IPv4 allocation mechanisms by the IANA (WG Chair)

APWG Agenda - Friday (2)

- U. On IPv6 Allocations and 6RD

  – Jan Zorz and Mark Townsley

- Y. Open Policy Hour

- AOB

Agenda Bashing

- do you want to see anything changed?

- is something missing?

Minutes from RIPE 61 (Rome)

• have been circulated on the mailing list

• no comments so far

• more feedback? Any inaccuracies that need correcting?

B. current policy topics

- presentation by Emilio Madaio

D. On IPv6 Documentation Requirements

- presentation by Marco Hogewoning

before entering the discussions...

- No decisions are made here(!). This is to get feedback to the proposers and to get a feel for the Working Group's opinions.

- Consensus based process based on the *open* mailing list.

- please remember to speak into the microphone

- please speak your name, so the scribes can properly attribute what you said

- the session is webcast, so people who couldn't come to Amsterdam can still be participate

- remote feedback can be provided by IRC

Y. Open Policy Hour

- IPv4 Assigmments to IXPs from the Last /8
    - Andy Davidson, EIX WG chair

    - (normally Open Policy Hour is at the end of the APWG session, but we conflict with EIX on Friday)

E. Feedback from NCC Registration Services

- presentation by Alex le Heux

- . . . based on day-to-day operations in NCC RS

- ASN 32 assignments - global overview

- planned implementation details for the "Last /8"

- policy for upgrading "initial /32 IPv6 allocation" assigned to large carriers to "something that is large enough for their needs"

- typical IPv6 PI discussions between RIPE members and the NCC RS – "this is where the sore spots are"

- the big PI discussion is *after* the coffee break

coffee break!

• please be back at 11:00

RIPE Address Policy Working Group

May 5, 2011 / 11:00-12:30
RIPE 62, Amsterdam

WG Chairs: Gert Döring, & Sander Steffann

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Agenda for APWG Part II

- L. On IPv6 Policy - Gert Döring, WG Chair

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  - proposal how to re-do the IPv6 allocation framework

  - discussion!

- M. discussion of open policy proposals, IPv6 related

  - 2011-02 - Removal of multihomed requirement for IPv6 PI

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- *lunch break, end of thursday's APWG meeting*

Let's enter the discussions

- No decisions are made here(!). This is to get feedback to the proposers and to get a feel for the Working Group's opinions.

- Consensus based process based on the *open* mailing list.

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returning to IPv6 PI discussion

- **this is only about IPv6**

- IPv4 is different, and we take this into account

- looking into the future

returning to IPv6 PI discussion (old slide)

- IPv4 PI policy and IPv6 PI policy are not fully in-line
  - IPv6 PI policy doesn't permit "transit network" assignment
  - you can run an DSL network on IPv4 PI, but not on IPv6 PI
  - IPv4 PI doesn't require "multihoming", IPv6 PI *does*

- ambiguity on border between "my network" (PI OK) and "customer network" (PI not OK)
  - for hosting / datacenter providers

- do we want this changed? if yes, how?

- background info from Alex Le Heux from the RIPE NCC RS

why is there a difference between PA and PI?

- in the end, it's "just some numbers" given out by the RIPE NCC to "consumers" of these numbers

- difference comes from intended use:

- PA

  - intended to aggregate (A) thousands or millions of end users into a single block, single routing table slot

  - assumed that "ISP" would be RIPE member anyway

  - liberal sizing, no strings attached

- PI

  - intended for a single independent (I) end-user network

  - not indended as "cheap replacement for RIPE membership"

  - specific purpose (BGP multhoming) $\Rightarrow$ strings attached

history of IPv6 allocation/assignment

- initial IETF model was very strict on aggregation
  - "Top Level Aggregator" ISPs get a /13
  - default-free zone hard bounded to 8192 routes
  - question "who is worthy?" not answerable $\Rightarrow$ abandoned
- initial RIR IPv6 policy (1999) gave LIRs a /35 (minimum)
  - avoided TLA problem, but a bit on the small side
  - changed to /32 in 2002
  - still strong focus on aggregation $\Rightarrow$ no PI
- since then, detail tuning of policy for allocation to LIRs
  - HD ratio and end user assignment size adjusted
  - removal of the requirements to announce as an aggregate (only) from the policy (2009-06), deferring to routing WG

history of IPv6 allocation/assignment (2)

- IPv6 PI proposal introduced by Jordi Palet in 2006-01

  - *strong* resistance from the "aggregation!" camp

  - experience with IPv4 PI caused quite some opposition

  - argument that finally got accepted: multihoming proposals from IETF are not going anywhere (in reasonable time), and solution needed for *enterprise end-users* that want to do *BGP-based multihoming with IPv6*

  - proposal accepted in April 2009

  - lots of strings attached (multihoming, no sub-assignment)

- over time, emphasis shifted from "maximum aggregation" to "find workable compromise, encourage *use* of IPv6"
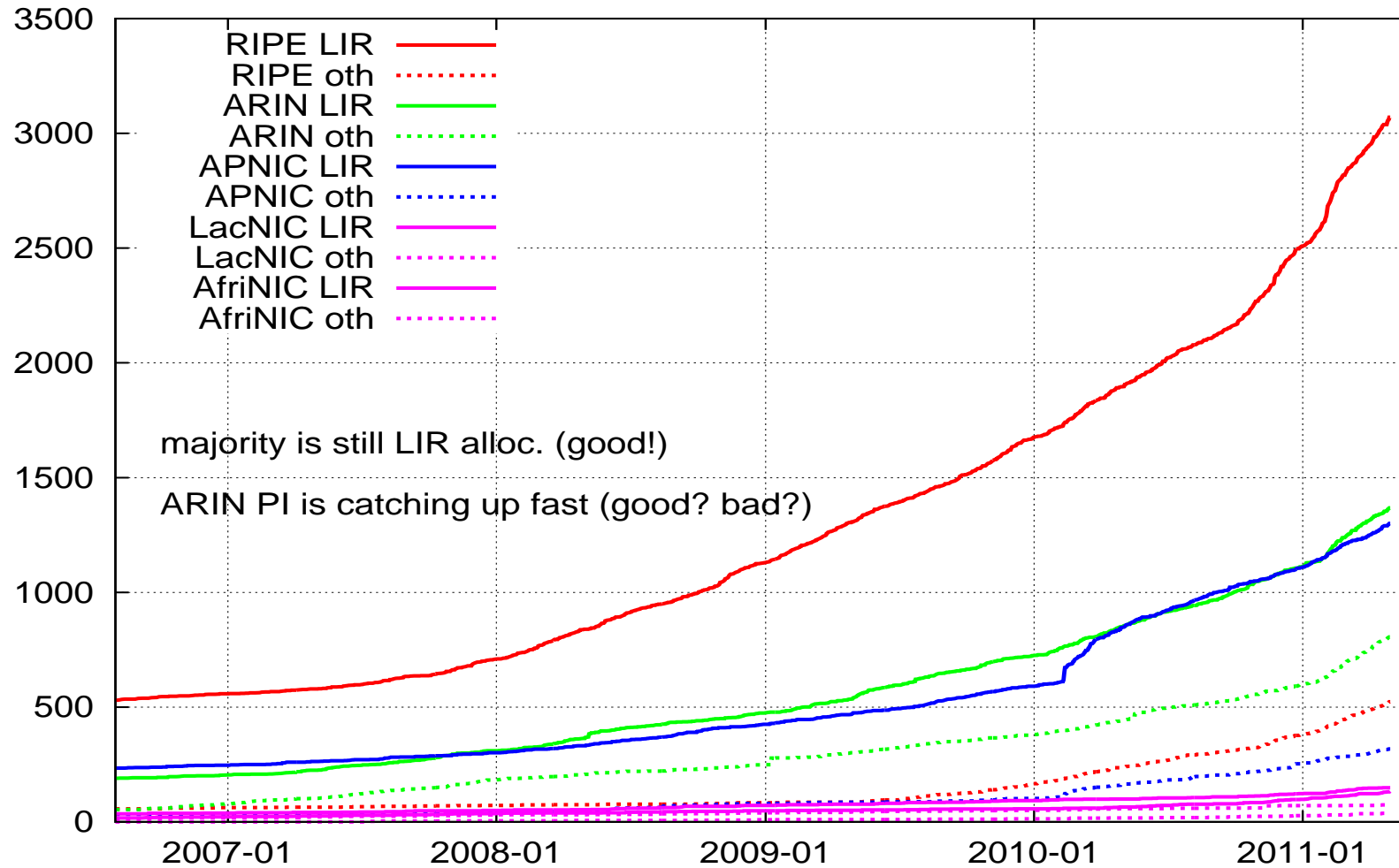
pillars of IP address management

- registration

  - clear documentation who "owns" a certain number

  - goes along with verifiability in the routing system

- aggregation

  - keeping the routing table under control

  - trying to balance business needs/wants and global cost

- conservation

  - making sure we don't run out of addresses

  - for v6, we can be more liberal, but still finite resource
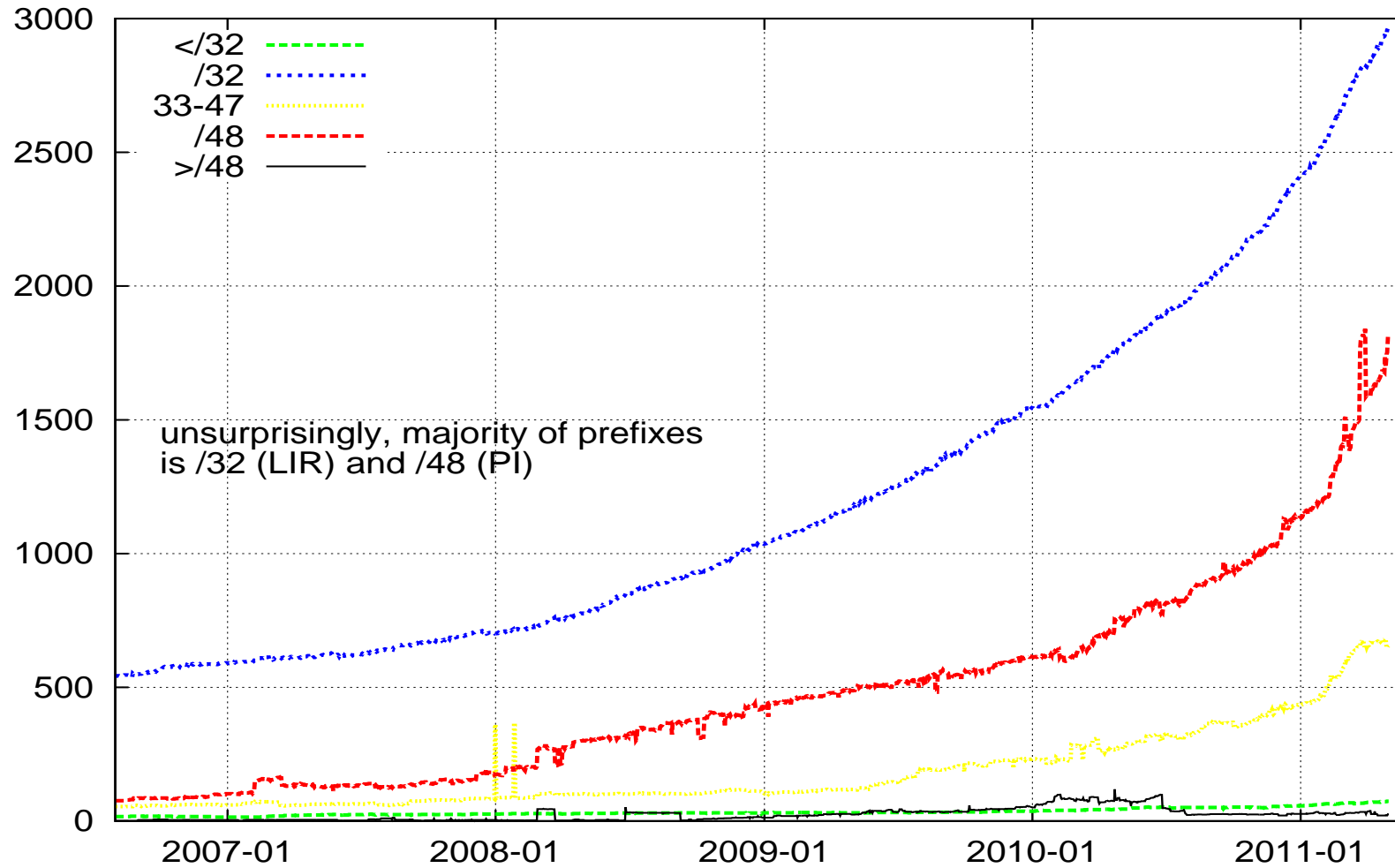
address policy needs to balance...

- routing table
  - 1 million routes will break it for everbody

- NCC costs
  - we need the NCC to have a solid financial basis

- end user costs
  - too expensive RIR cost will lead to creative workarounds

- usefulness
  - address space acquired must be useful for the purpose

- address space efficiency

- good stewardship: encourage /48.../64 to end users

IPv6 PA and PI given out by RIRs

majority is still LIR alloc. (good!)

ARIN PI is catching up fast (good? bad?)

Legend:
- RIPE LIR
- RIPE oth
- ARIN LIR
- ARIN oth
- APNIC LIR
- APNIC oth
- LacNIC LIR
- LacNIC oth
- AfriNIC LIR
- AfriNIC oth

prefix size in IPv6 routing table

Legend:
- </32 (green dashed)
- /32 (blue dotted)
- 33-47 (yellow dotted)
- /48 (red dashed)
- >/48 (black solid)

unsurprisingly, majority of prefixes is /32 (LIR) and /48 (PI)

ongoing discussions about PI

- multihoming requirements
  - what *is* multihoming and how to prove it?
  - 2011-02 aims to remove this requirement

- costs
  - PI seen as "cheaper way to number my ISP business"
  - PI isn't meant as such, and that causes frictions

- usage restrictions (no sub-assignment)
  - "why can't I number my datacenter customers from my PI?"
  - some proposals in the discussions, nothing tangible yet

- is this detailed fine-tuning of PI policies the right approach?

more radical approach

- abandon distinction between PA and PI completely

- RIPE members (LIRs) go to RIPE NCC and ask for "numbers"

- numbers are then used to "number things"

- difference between "ISP like" users and "end users" could be taken into account by checkbox

  - ( ) I want to assign /56s to end users $\Rightarrow$ /32 allocated

  - otherwise default is /48

  - larger than /48 or /32 if documented need

- "sponsoring LIR" model or "become a member"

- AGM and NCC board to re-balance the costs to make size of IPv6 allocation not relevant for "become LIR or not?" decision

what do YOU think?

- feedback from the room, please

- next steps: take feedback, form policy text, propose to the list

M. Discussion of open policy proposals

- 2011-02 – Removal of multihomed requirement for IPv6 PI
  - Erik Bais

N. On Transfer Guidelines

• Dave Wilson

• bringing non-obvious problems with transfers into the open

• solicit feedback, funnel into RIPE BCP document

Thanks!

- thanks for your input

- thanks for your help in forming policies in the RIPE region

- . . . enjoy your lunch!

- . . . and we hope to see you back tomorrow, 09:00 (!!)