

IPv4 depletion & IPv6 deployment in the RIPE NCC service region

Kjell Leknes - June 2010

Outline

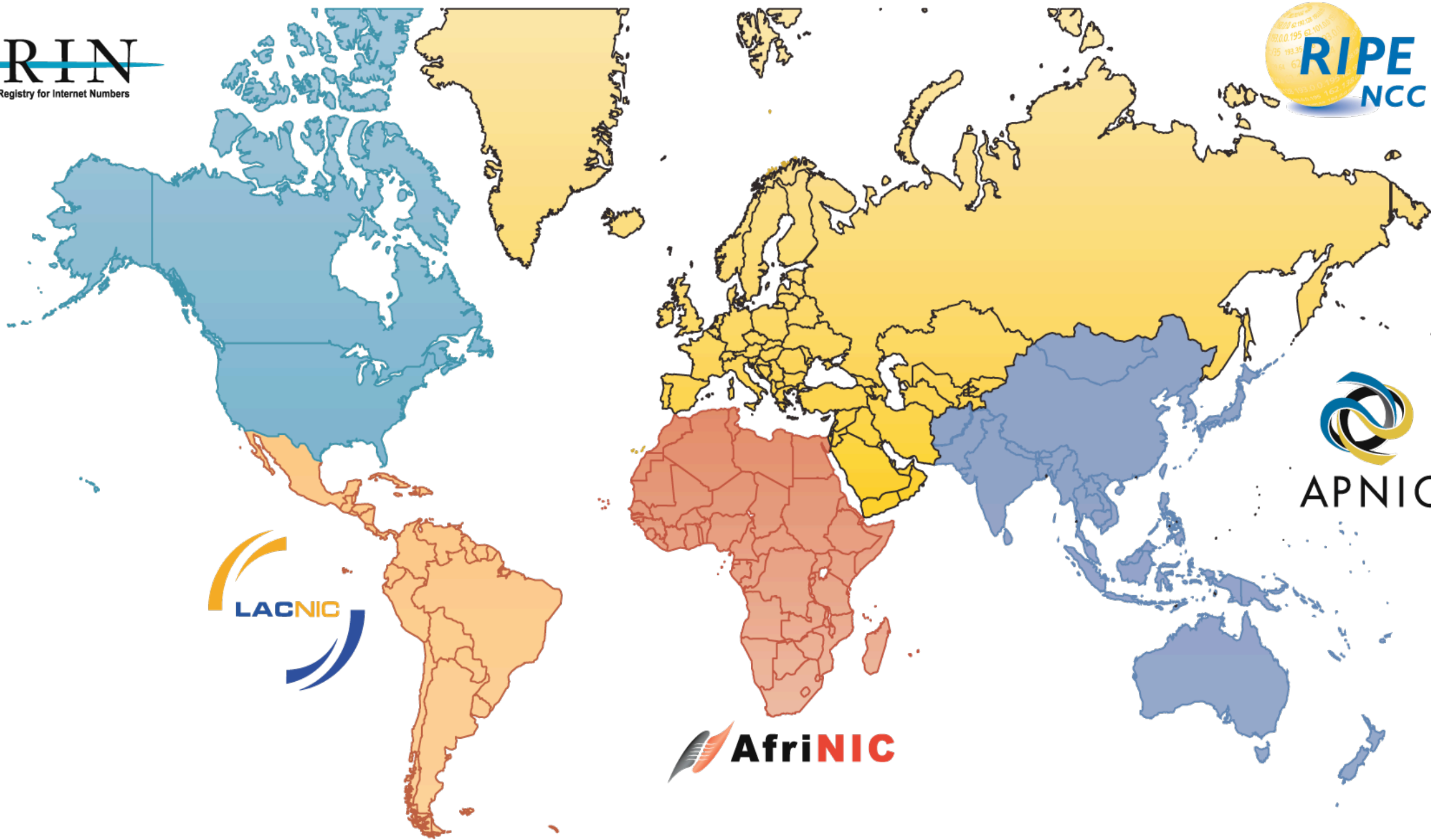
- About RIPE and RIPE NCC
- IPv4 depletion
- IPv6 deployment
- Engaging the community
 - RIPE NCC and the RIPE community
 - Training courses
 - IPv6 Act Now

RIPE NCC

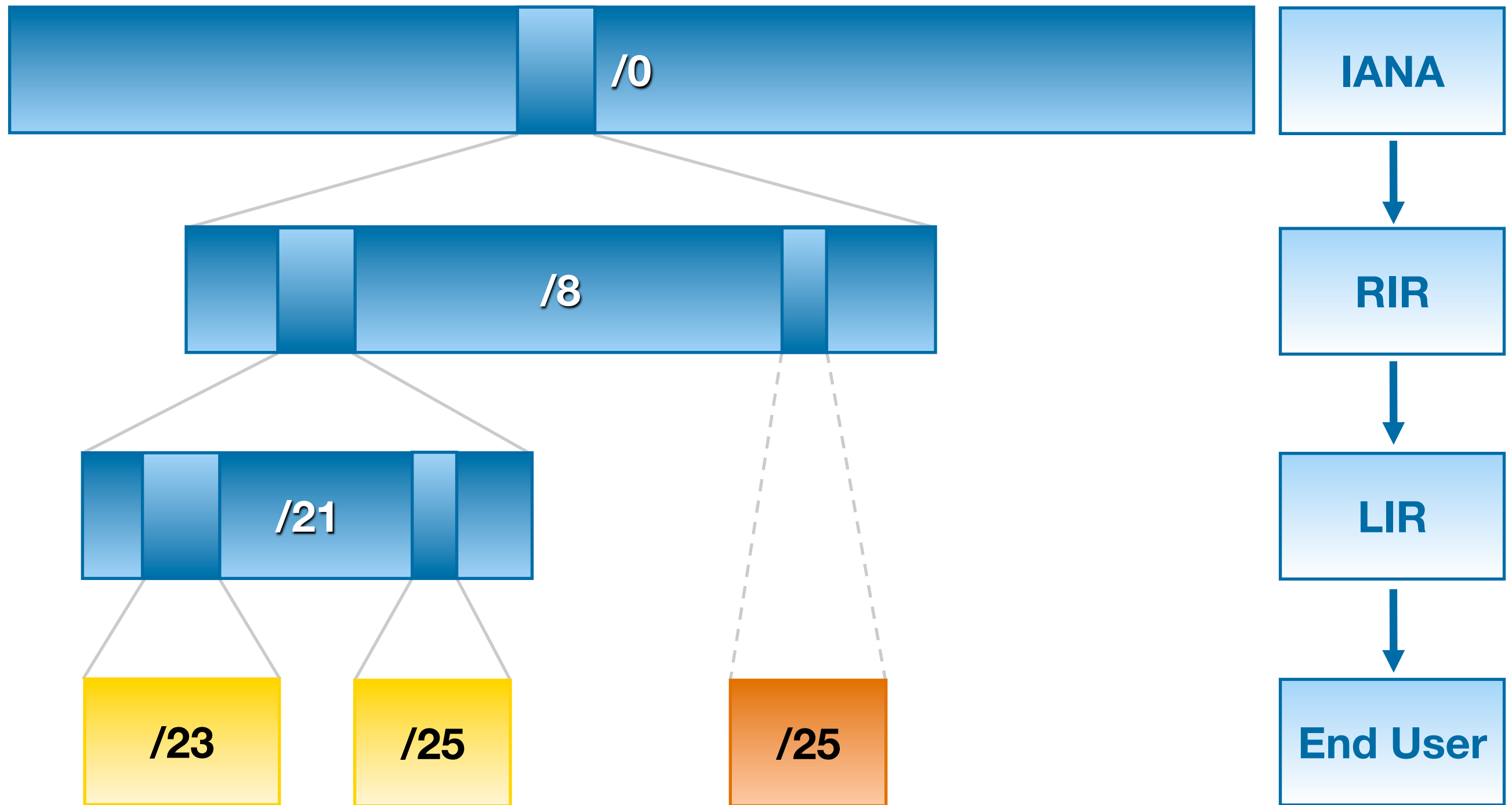
- Since 1992 in Amsterdam
- Independent not-for-profit organisation
- 6500+ members in 75 countries
- One of five Regional Internet Registries (RIRs)
- Does not make policies

The five RIRs

ARIN
American Registry for Internet Numbers



IP address distribution



 Allocation  PA Assignment  PI Assignment

RIPE NCC services

- Distribute resources
 - IPv4
 - IPv6
 - AS numbers
- Training courses
 - LIR
 - Routing Registry
 - DNS for LIRs
 - IPv6
- Database Reverse DNS
- ENUM
- K-root name server
- E-learning
- RIPE Labs
- IPv6 Act Now website

RIPE community

- Policy forum
 - Not a legal entity
 - No official membership
 - Open to everyone
- One RIPE chairman and working group chairs
- No voting --> consensus
- Work done on mailing lists and at meetings by:
 - Working groups
 - Task forces

RIPE meetings

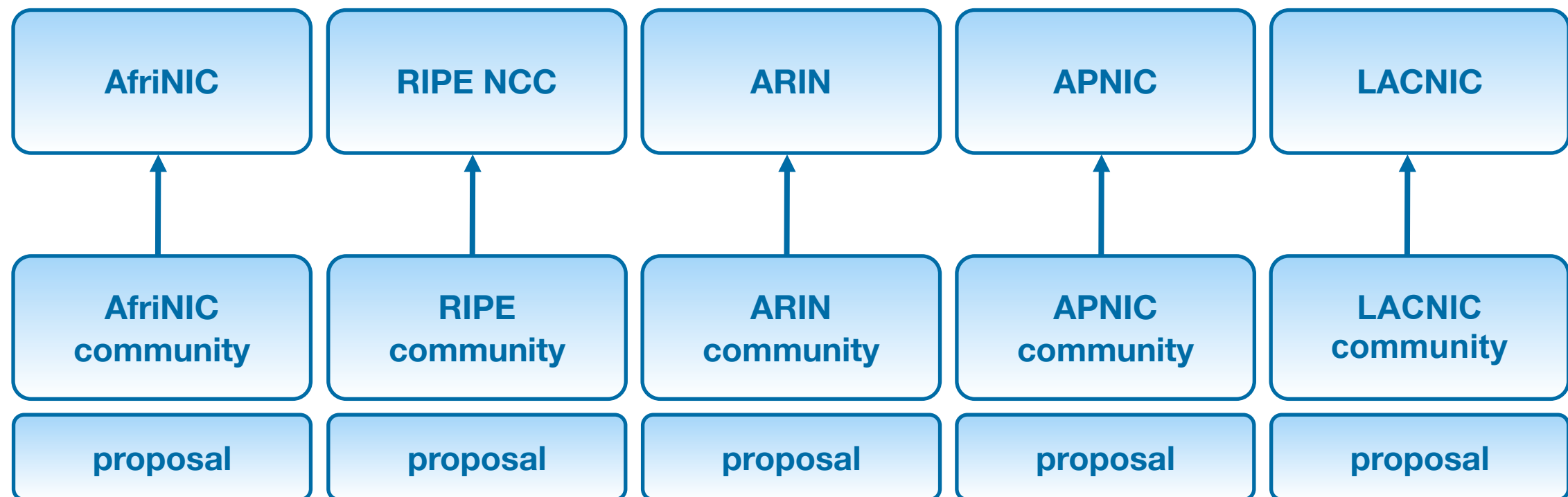
- Two RIPE meetings per year
- Plenary discussions
 - Wide ranging topics
- Working group meetings
 - More specific focus
- Policy discussions
- Exchange of views and information
- Interaction with other internet stakeholders



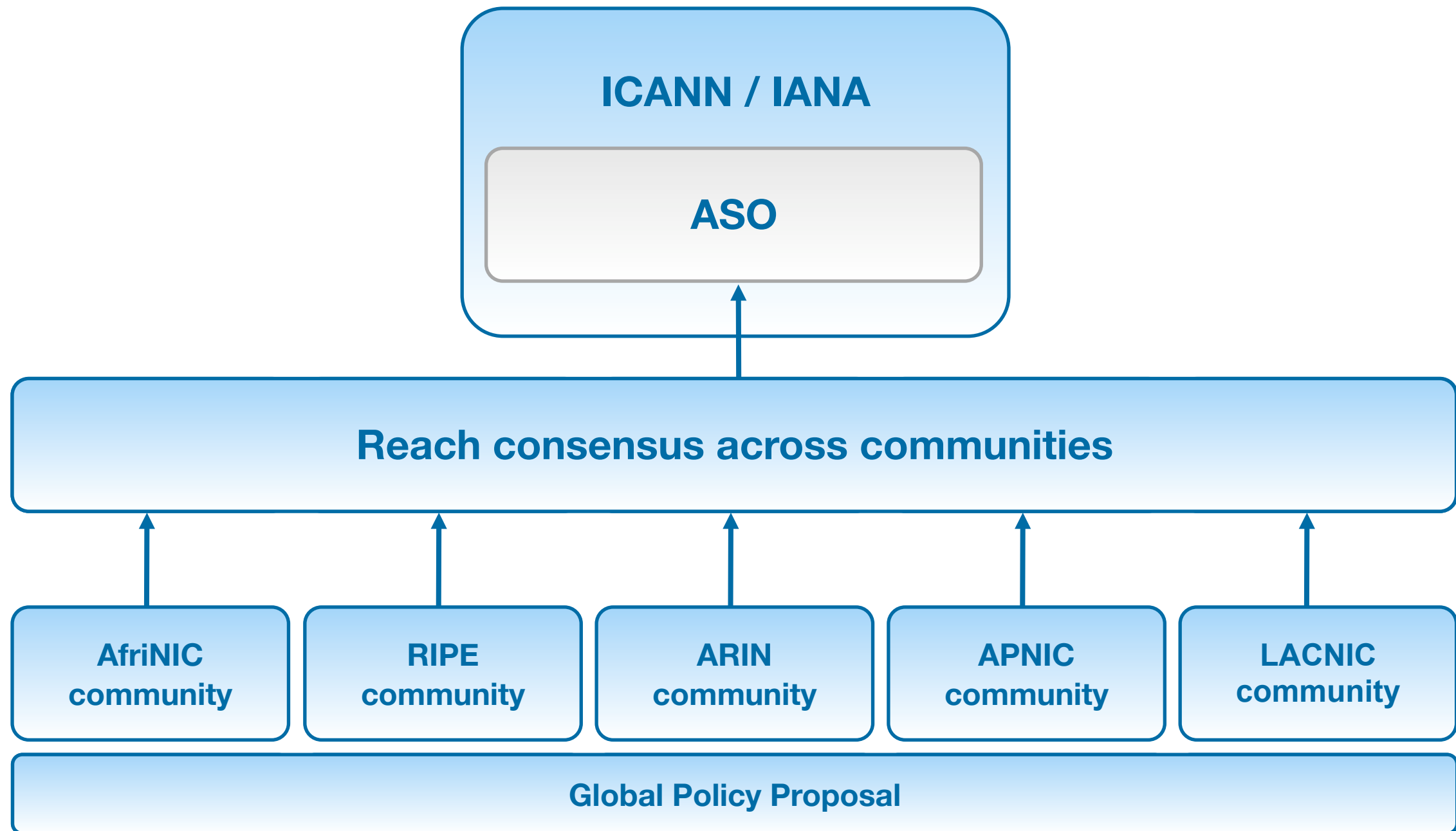
RIPE policy development

- Open
 - Anyone can participate
 - Policy meetings
 - Mailing lists
- Transparent
 - List discussions archived publicly
 - Meetings transcribed
- Bottom-up process
 - By the Internet community

Global policy development



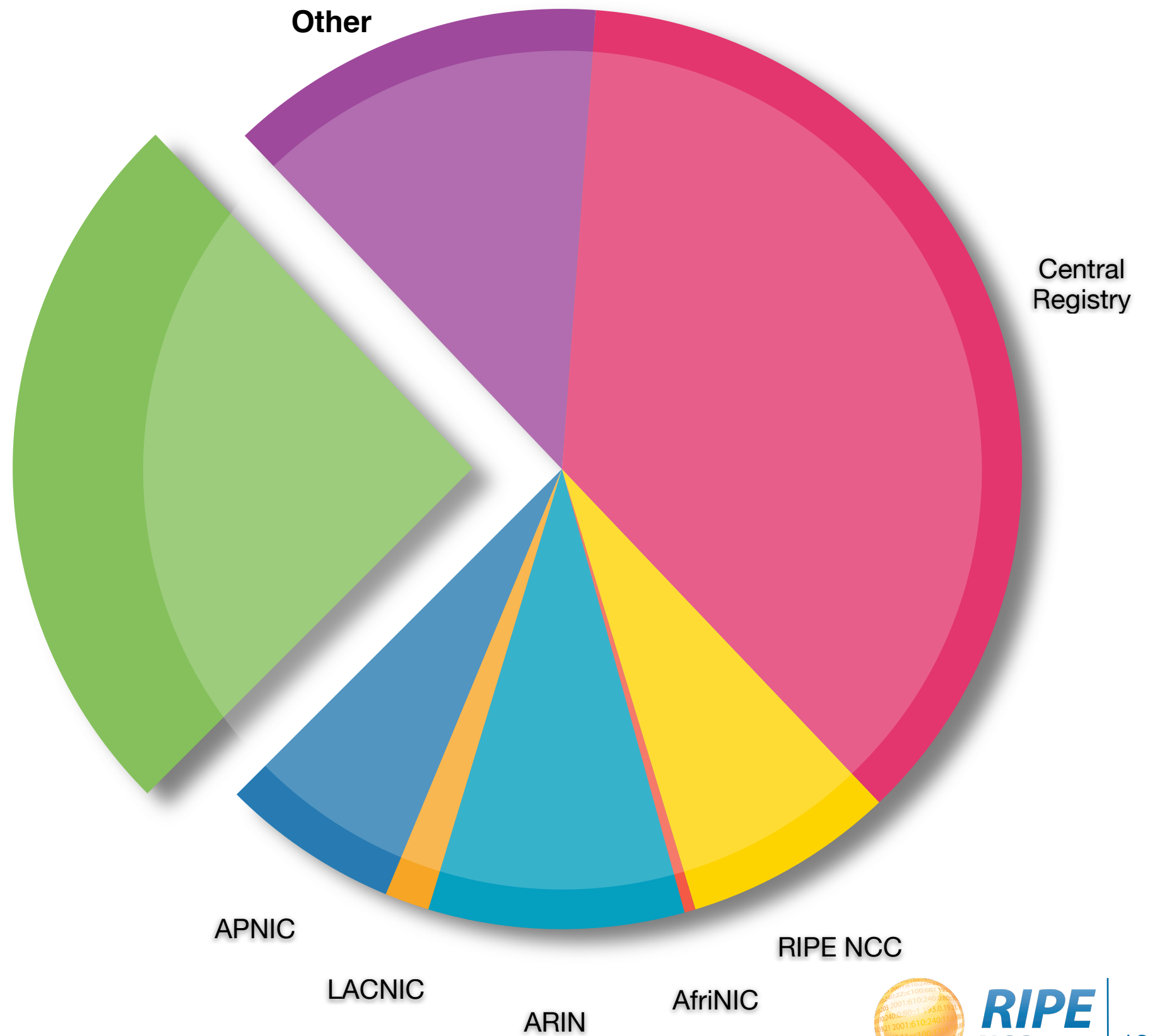
Global policy development



IPv4 depletion

IPv4 address pool - June 2005

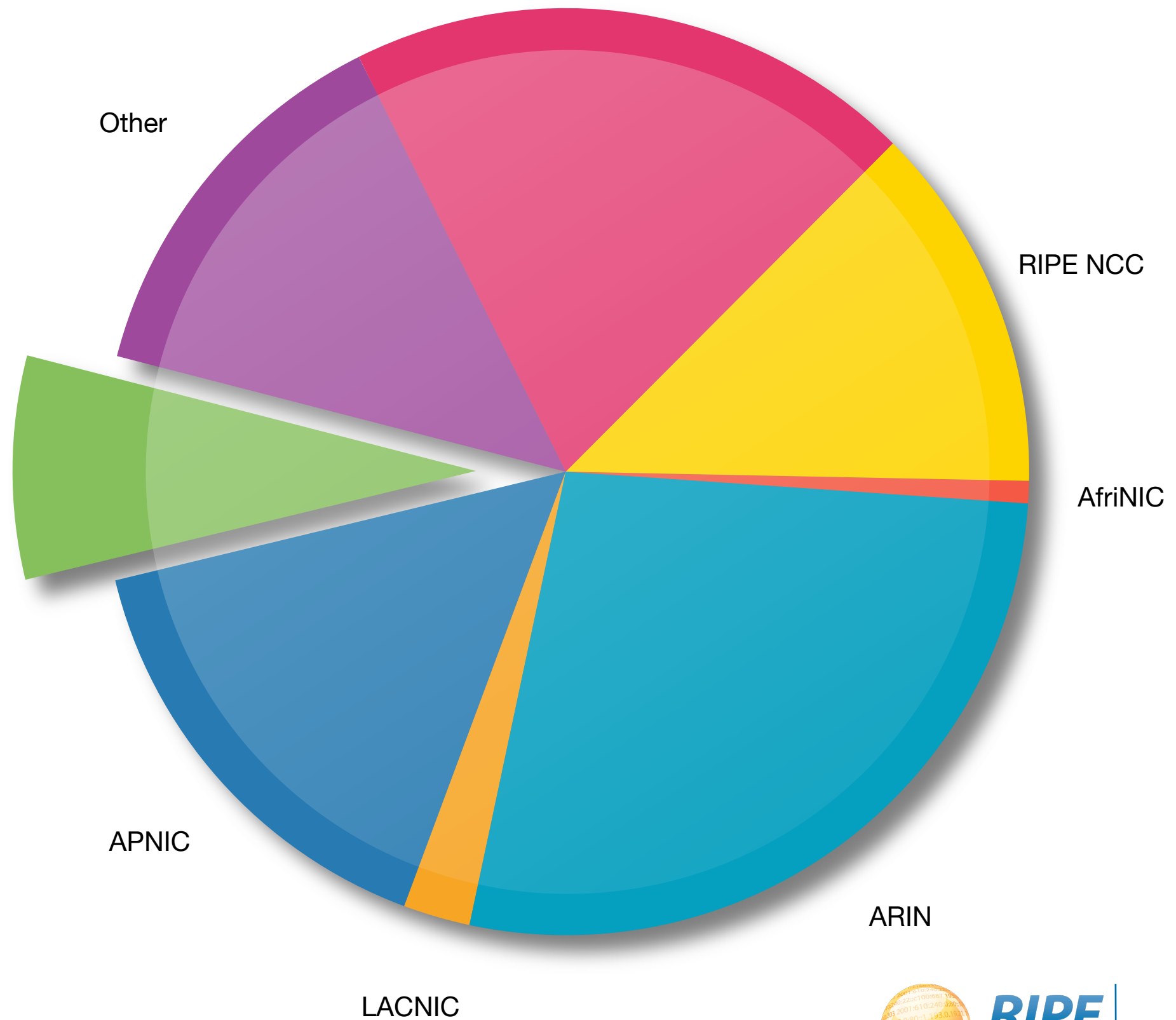
25%
available



IPv4 address pool - Now

Various

6%
available

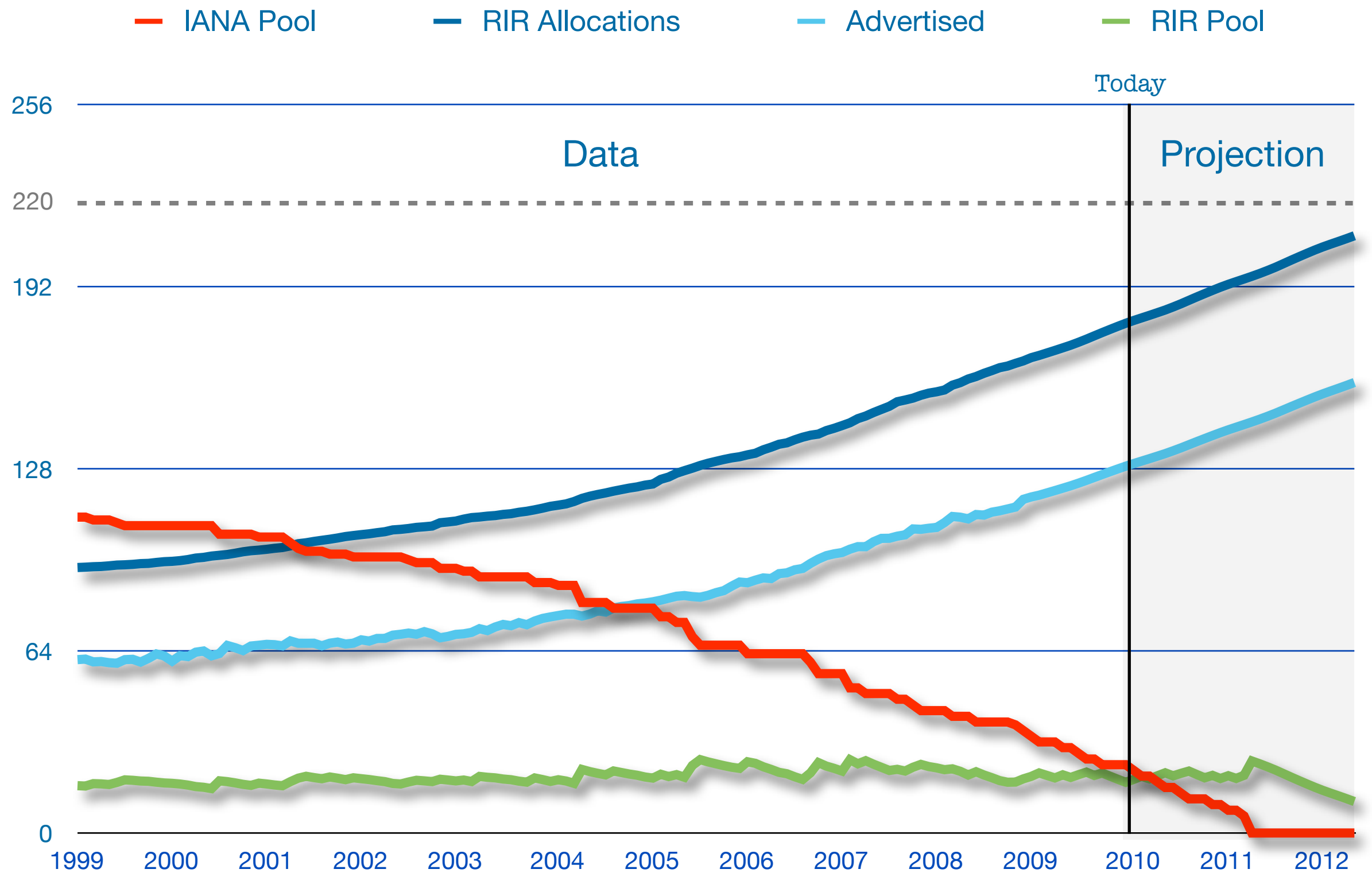


What we know

- RIRs are in total consistently consuming around 10 /8s each year
- There are 16 /8 blocks remaining in the global free pool in June 2010
- Projected exhaustion of the global IPv4 free pool August 2011
- IPv6 adoption is the only way to ensure continued Internet growth



IPv4 address pool projections



IPv4 allocation reduction

- RIPE NCC currently allocates up to 12 months
- As of 1 July 2010 - 9 months
- As of 1 January 2011 - 6 months
- As of 1 July 2011 - 3 months



IPv4 reclamation

- RIPE NCC reclaim addressing based on:
 - Non payment
 - Returned by LIR
 - LIRs pending closure
- RIPE NCC has so far reclaimed 5,730,304 IPs

The last /8

- LIRs may receive only one allocation
- Max allocation size /22 (1024 IPs)
- Only available to LIRs having an IPv6 allocation
- /16 (65 536 IPs) will be reserved for unforeseen circumstances



IPv6 deployment

Getting an IPv6 allocation

- Must be an LIR
- LIR must plan to deploy IPv6 within 2 years
- Minimum allocation size /32
 - 65536 /48's
- Customer assignments (end sites) between:
 - /64 (1 subnet)
 - /48 (65536 subnets)
- Every subnet should be a /64
- Announce as single prefix recommended

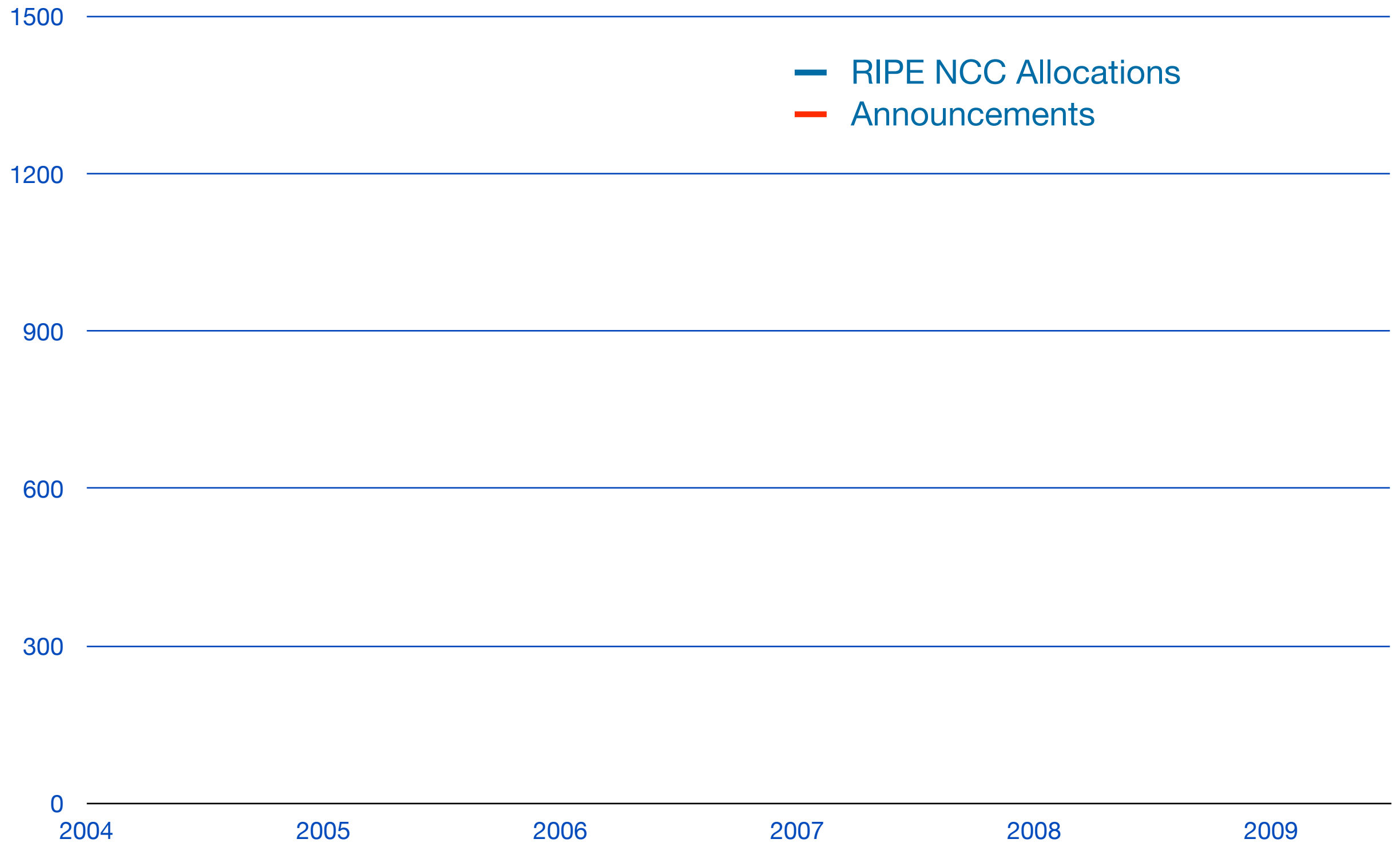


Getting IPv6 provider independent (PI) space

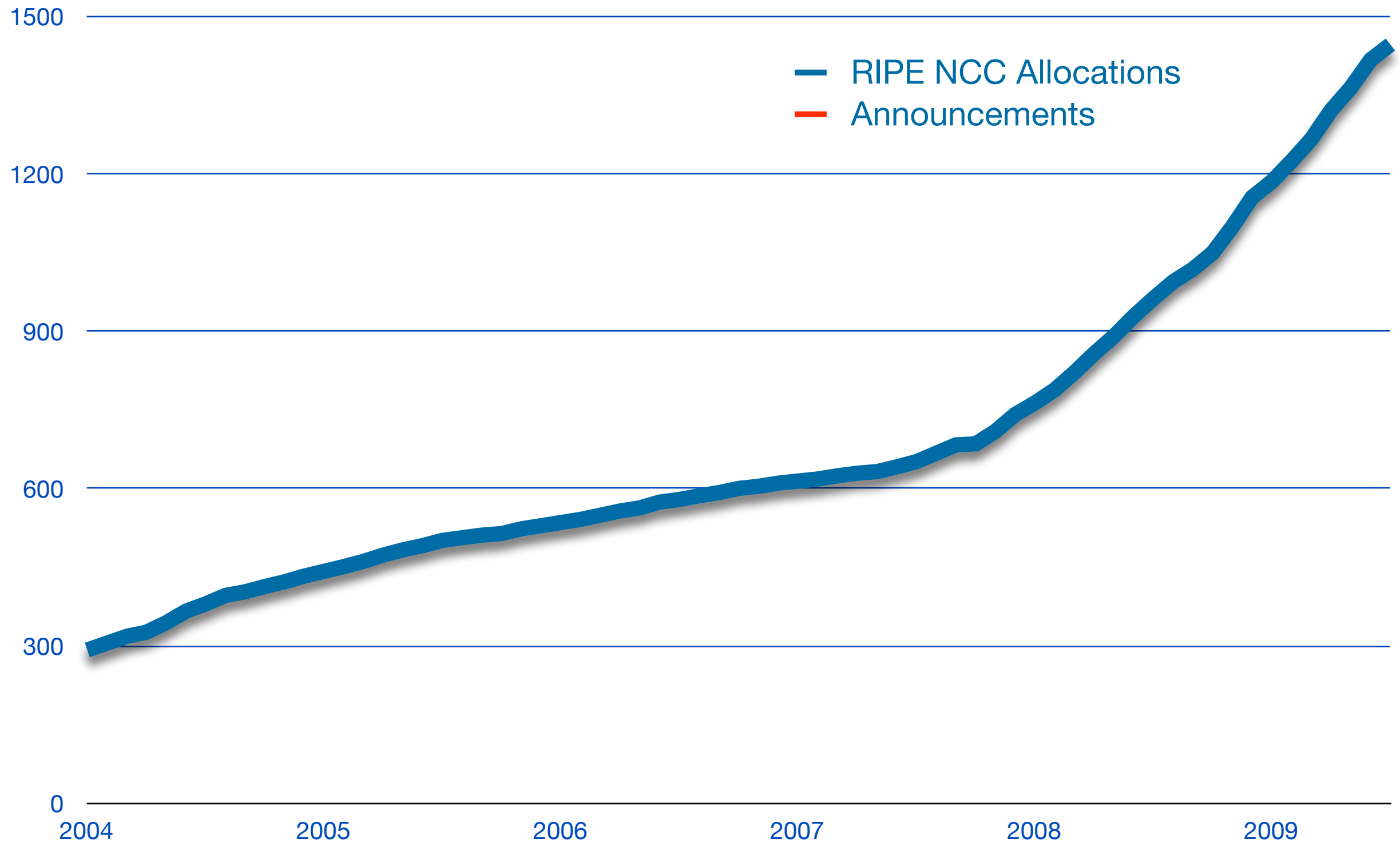
- To qualify you must:
 - Demonstrate you will multihome
 - Meet the contractual requirements
- Minimum assignment size /48
- Can only be used for infrastructure



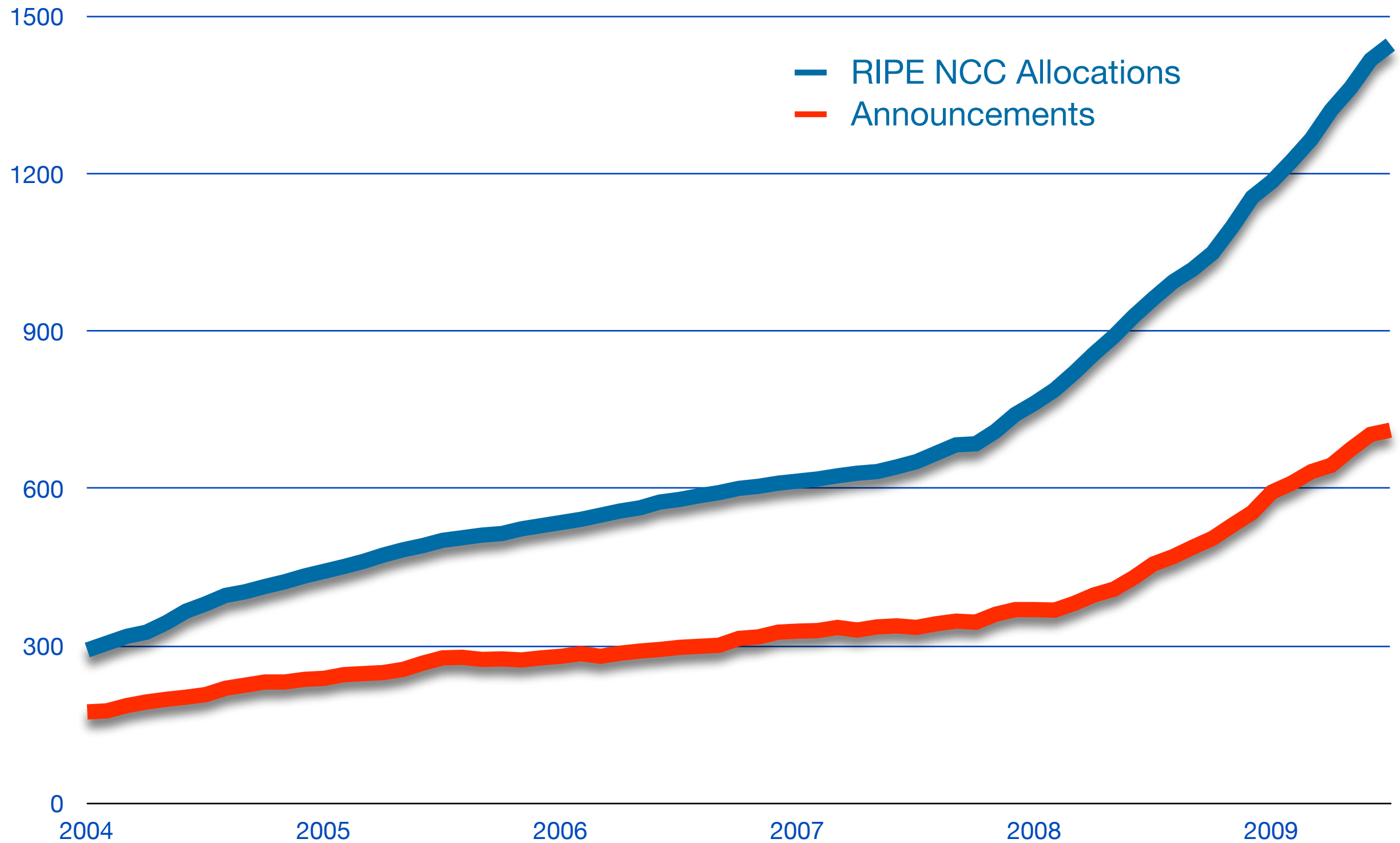
IPv6 allocations and announcements



IPv6 allocations and announcements



IPv6 allocations and announcements



Engaging the community

- RIPE / RIPE NCC events
 - RIPE IPv6 working groups
 - RIPE cooperation working group
 - RIPE NCC government roundtables
- Other fora:
 - Internet Governance Forum (IGF)
 - OECD
 - ITU events
 - European Commission (EC)
- IPv6 Act Now website



The screenshot shows the homepage of the IPv6 Act Now website. At the top, there is a search bar and a notification to stay updated on news. The main header features the 'IPv6 ACT NOW' logo and a navigation menu with links to Home, News, Info, Policy, Contact, and Forum. Below the header, a row of five interlocking puzzle pieces represents different user categories: 'How To Act Now', 'Small Business', 'Enterprise', 'ISP', and 'Government'. Each piece contains a brief description of the content. The 'Statistics' section features a 3D bar and line chart, while the 'Interviews' section shows a video of a man speaking. At the bottom, three light blue boxes provide quick links for 'What is IPv6?', 'What about IPv4?', and 'Forums'. A footer bar contains the text 'This website is operated by the RIPE NCC.' and 'Attribution-Noncommercial-Share Alike 3.0 Netherlands License.'

Search Stay updated on our news

Your IP: 2001:610:240:13:21b:63ff:fc4:4954

IPv6 ACT NOW Home News Info Policy Contact Forum

How To Act Now
Learn more about what you can do

Small Business
Everything a small business needs to know about IPv6 adoption

Enterprise
Deploying IPv6 within an enterprise

ISP
Implementing IPv6 as an ISP

Government
Information about IPv6 planning for government organisations

Statistics

Interviews

What is IPv6?
IPv6 is the new way the Internet is numbered.
[Click here to find out more](#)

What about IPv4?
IPv4 numbers are running out.
[How long have we got left?](#)

Forums
IPv6 Act Now Forums.
[See what people are saying!](#)

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Questions?

