

IPv6, Act Now!

National Norwegian Meeting on IPv6

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RIPE NCC

- One of the five Regional Internet Registries
- Support coordination of Internet operations
- Not for profit membership organisation
- Over 7000 active members
 - 650 new members in 2009
- Neutral, Impartial, Open, Transparent

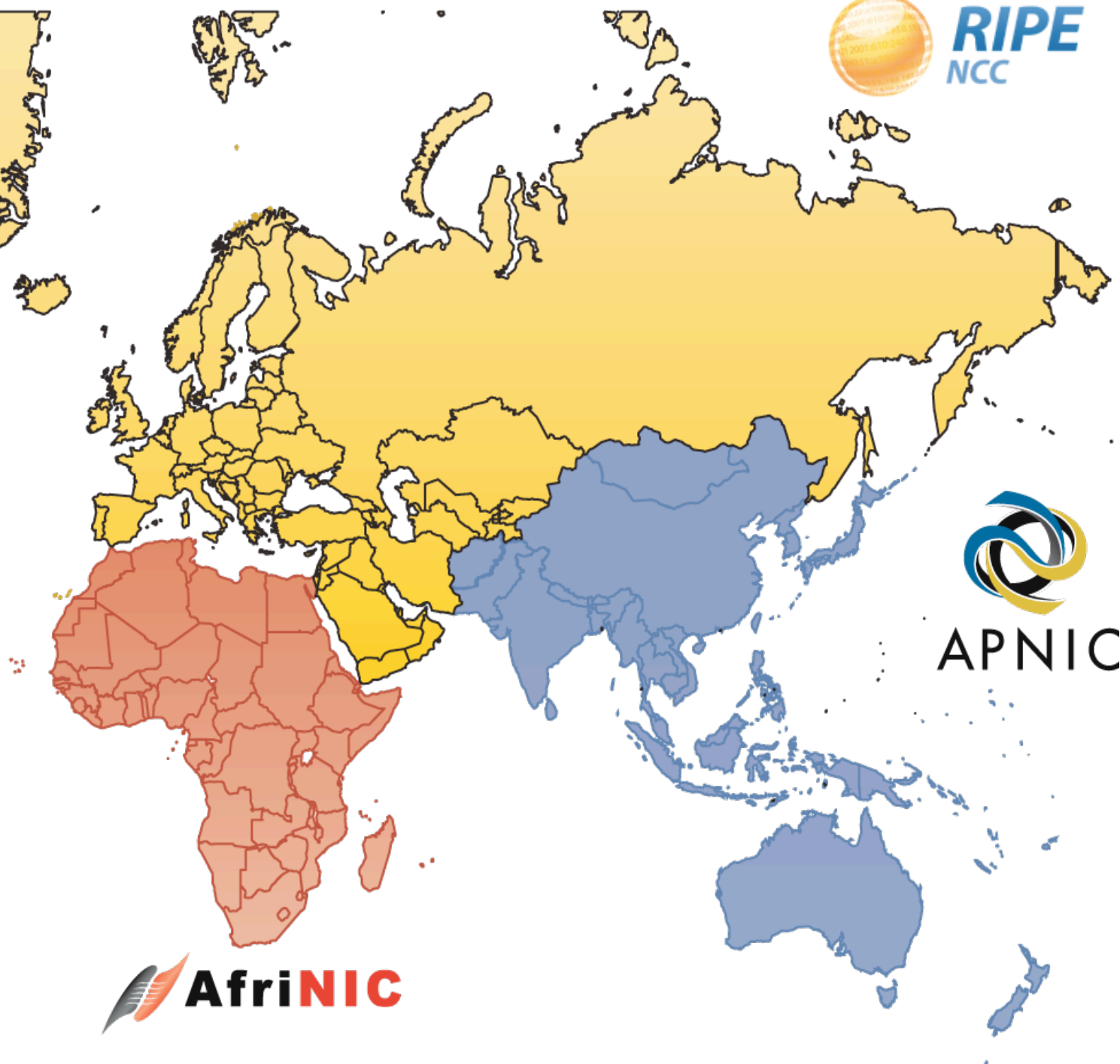
The Five Regional Internet Registries

ARIN
American Registry for Internet Numbers



LACNIC

AfriNIC

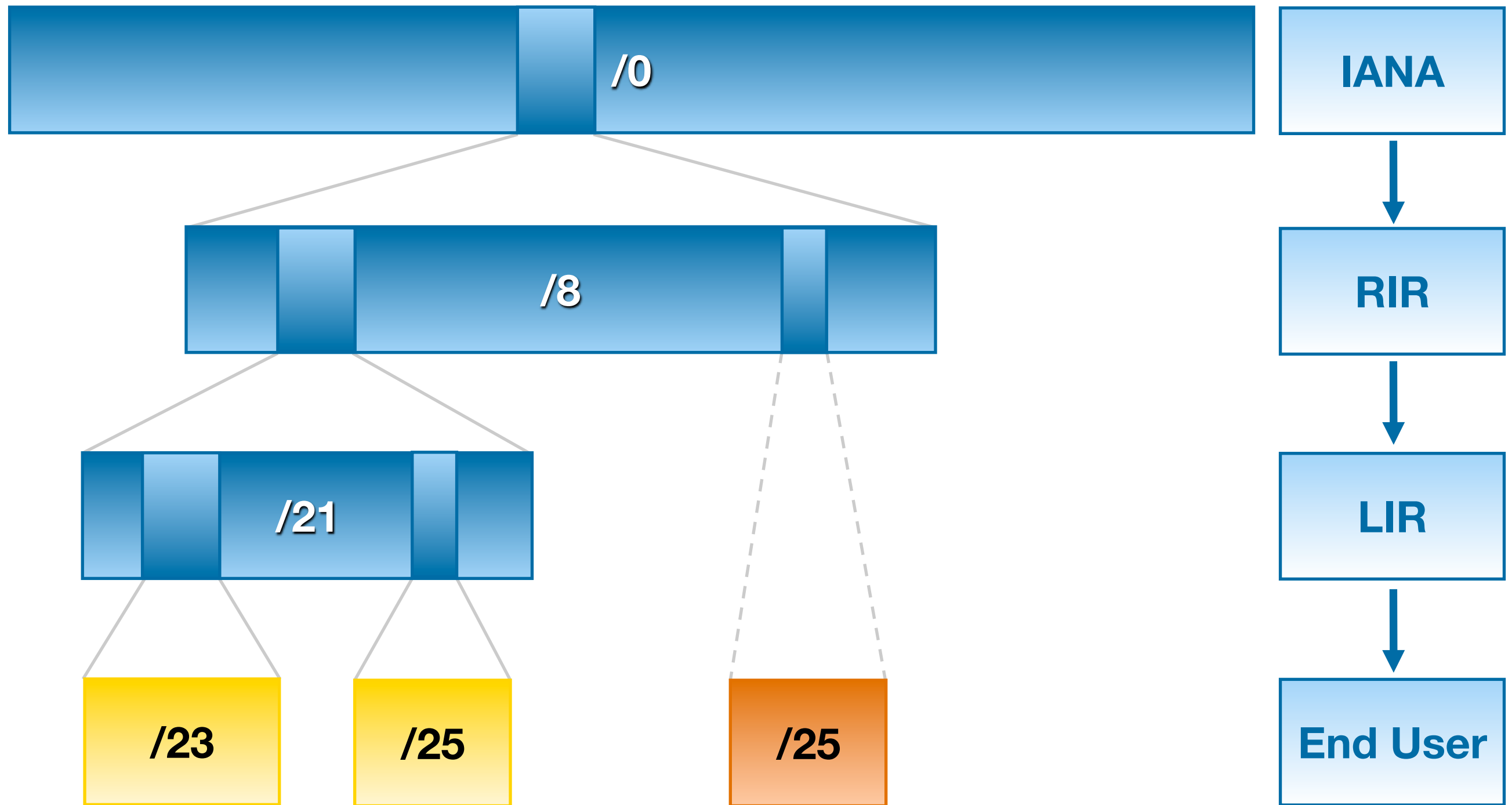


RIPE
NCC

APNIC

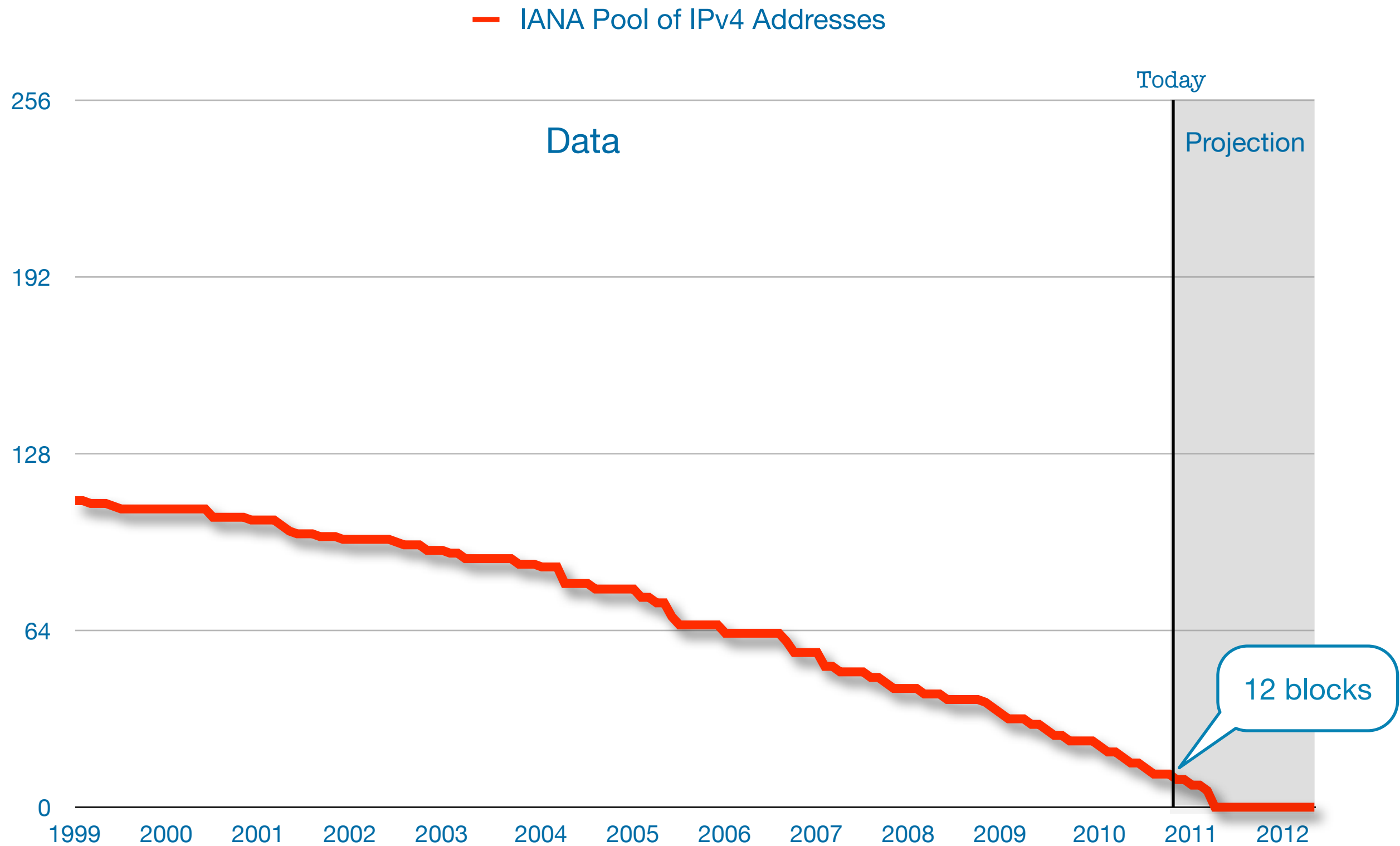
RIPE
NCC

IPv4 Address Distribution



 Allocation  PA Assignment  PI Assignment

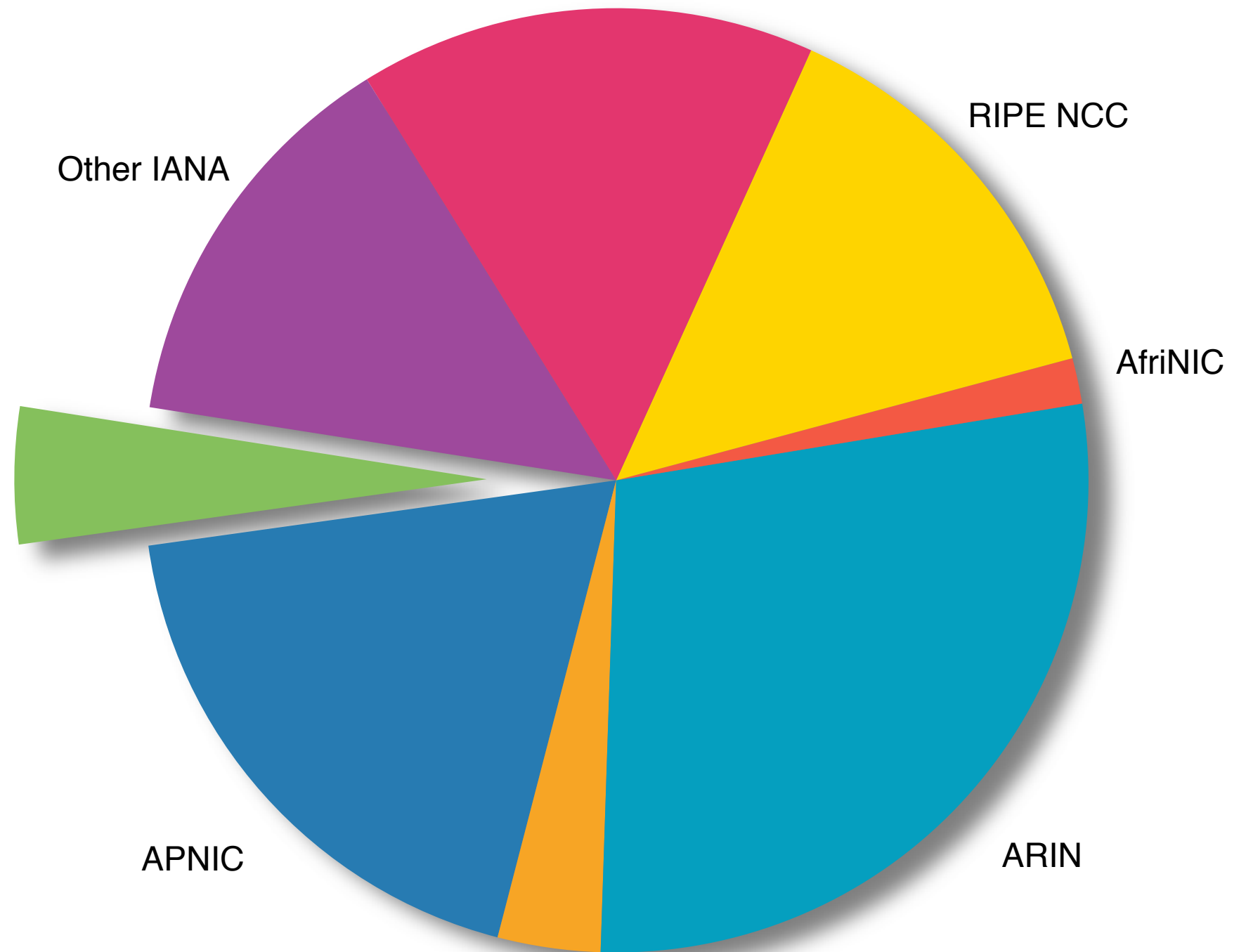
IPv4 Allocation Timeline



IPv4 Address Pool

Organisations

less than
5%
available



Reaching the Next Billion

- Around 1.9 billion Internet users now
 - five times as many as there were in the year 2000
 - around 29% of all people
- Mobile phones are becoming Internet devices
- The Internet of things

Wait and See?



IPv6 Address Basics

- IPv6 address: 128 bits
 - 32 bits in IPv4
- Every subnet should be a /64
- Customer assignments (sites) between:
 - /64 (1 subnet)
 - /48 (65,536 subnets)
- Minimum allocation size /32
 - 65,536 /48s
 - 16,777,216 /56s

Getting an IPv6 Allocation

- To qualify, an organisation must:
 - Be an LIR
 - Have a plan for making assignments
- Minimum allocation size /32

What Does an IPv6 Allocation Cost?

- /32 = 1 scoring unit
- /31 = 2 scoring units
- points = $\sum (2010 - 1992) \times \text{scoring unit} = 18 \times 1 + \dots$

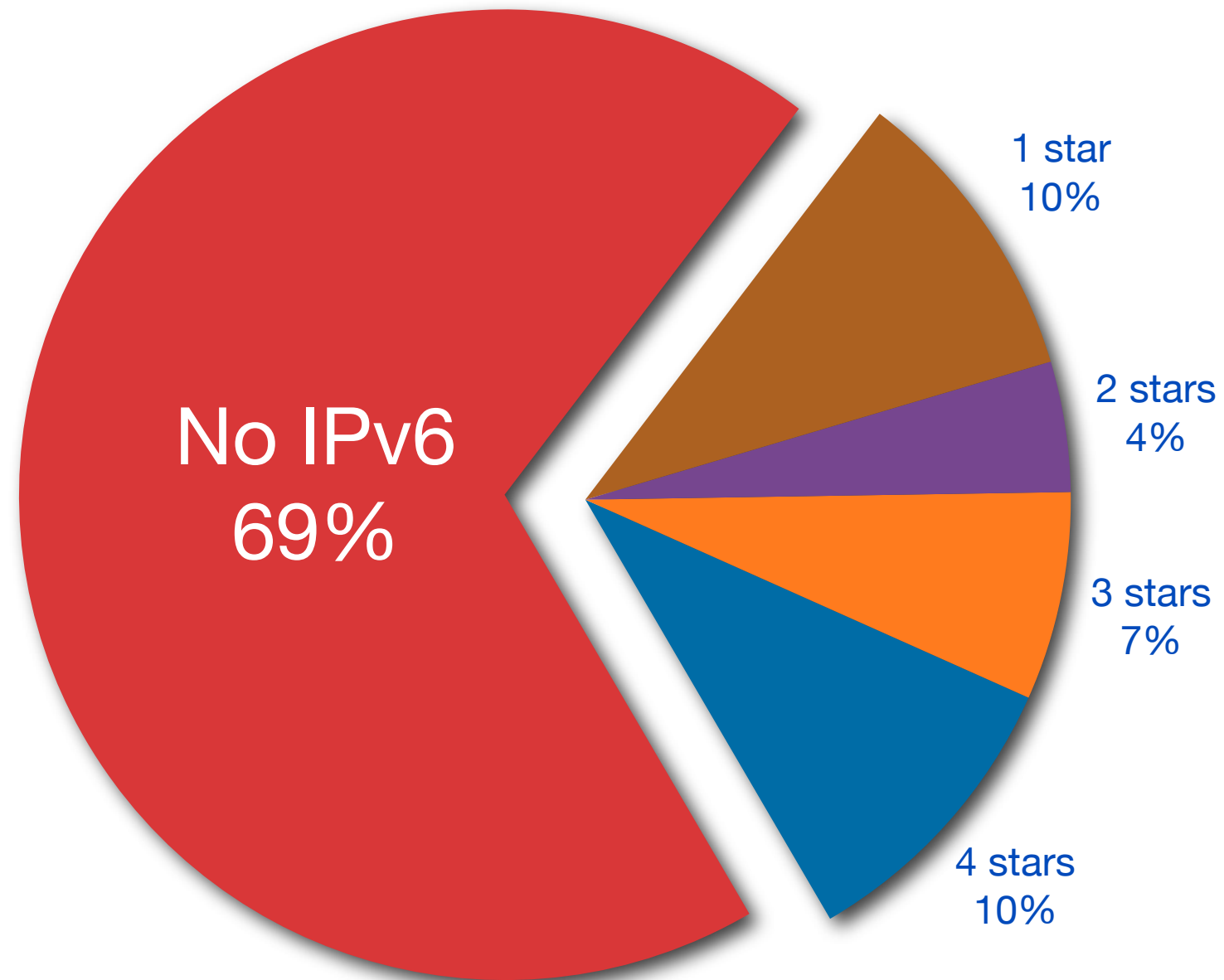
Category	Scoring Unit	Fee (€)
Extra Small	< 16	€ 1800
Small	16 - 936	€ 2550
Medium	936 - 7116	€ 4100
Large	7116 - 54916	€ 5500
Extra Large	> 54916	€ 5500

IPv6 RIPEness

- Rating system:
 - One star if the LIR has an IPv6 allocation
 - Additional stars if:
 - IPv6 Prefix is announced on router
 - A route6 object is in the RIPE Database
 - Reverse DNS is set up

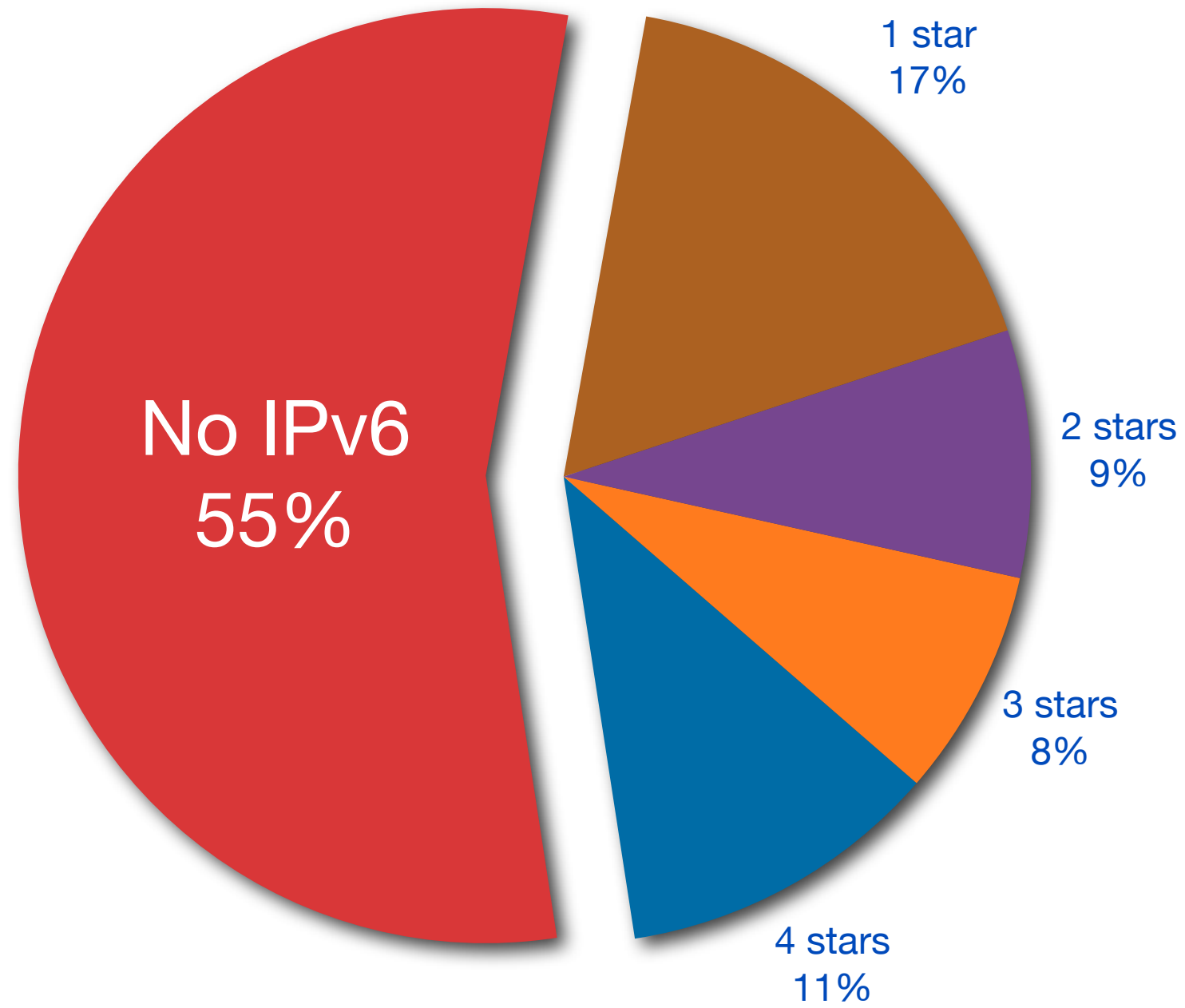
IPv6 RIPEness – Total Membership

● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6



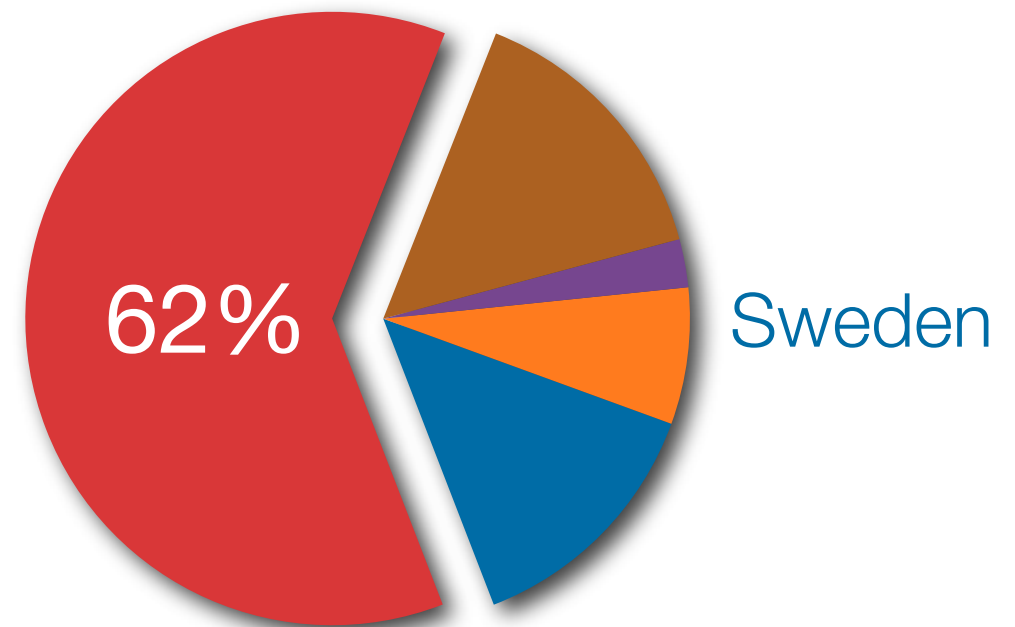
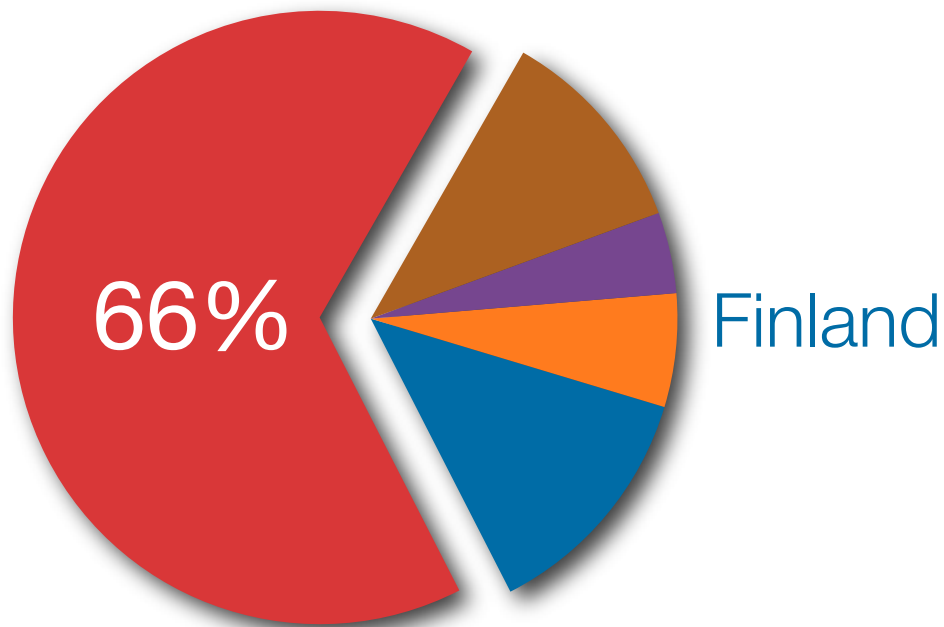
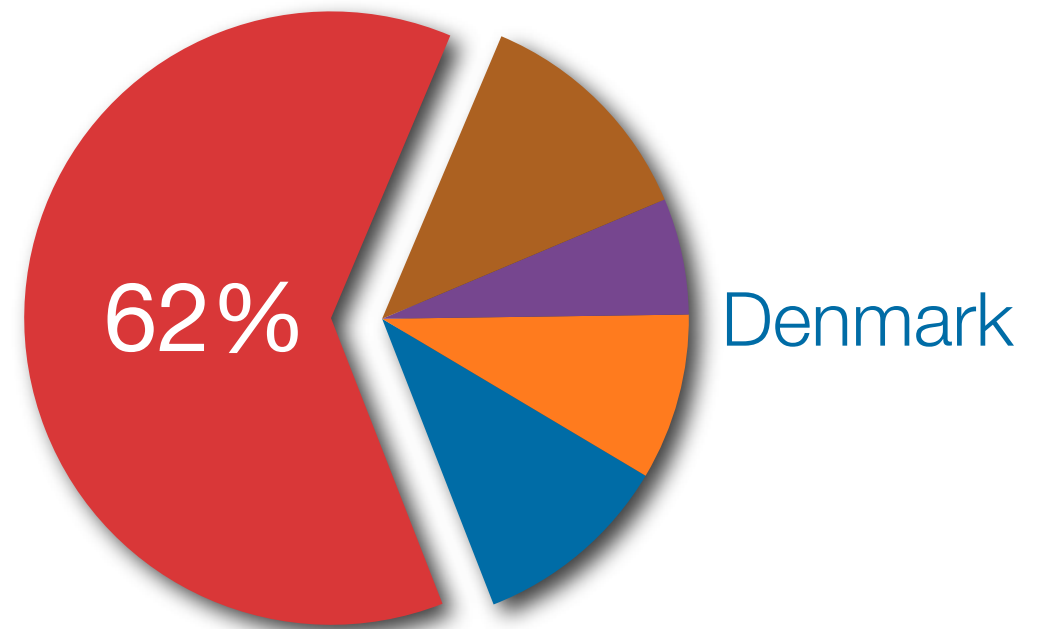
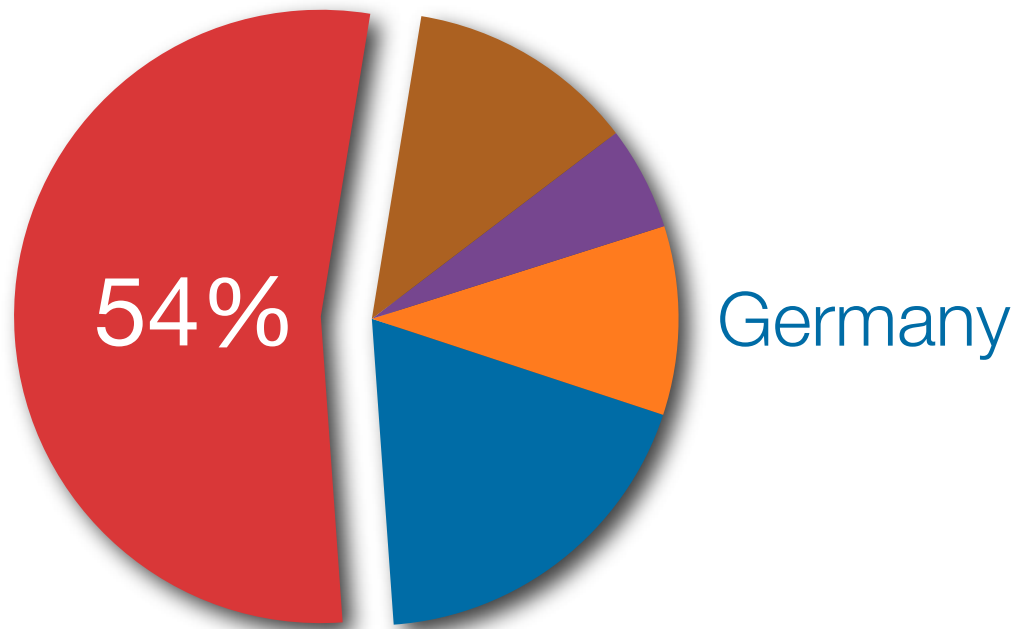
IPv6 RIPEness – Norway (152 LIRs)

● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6

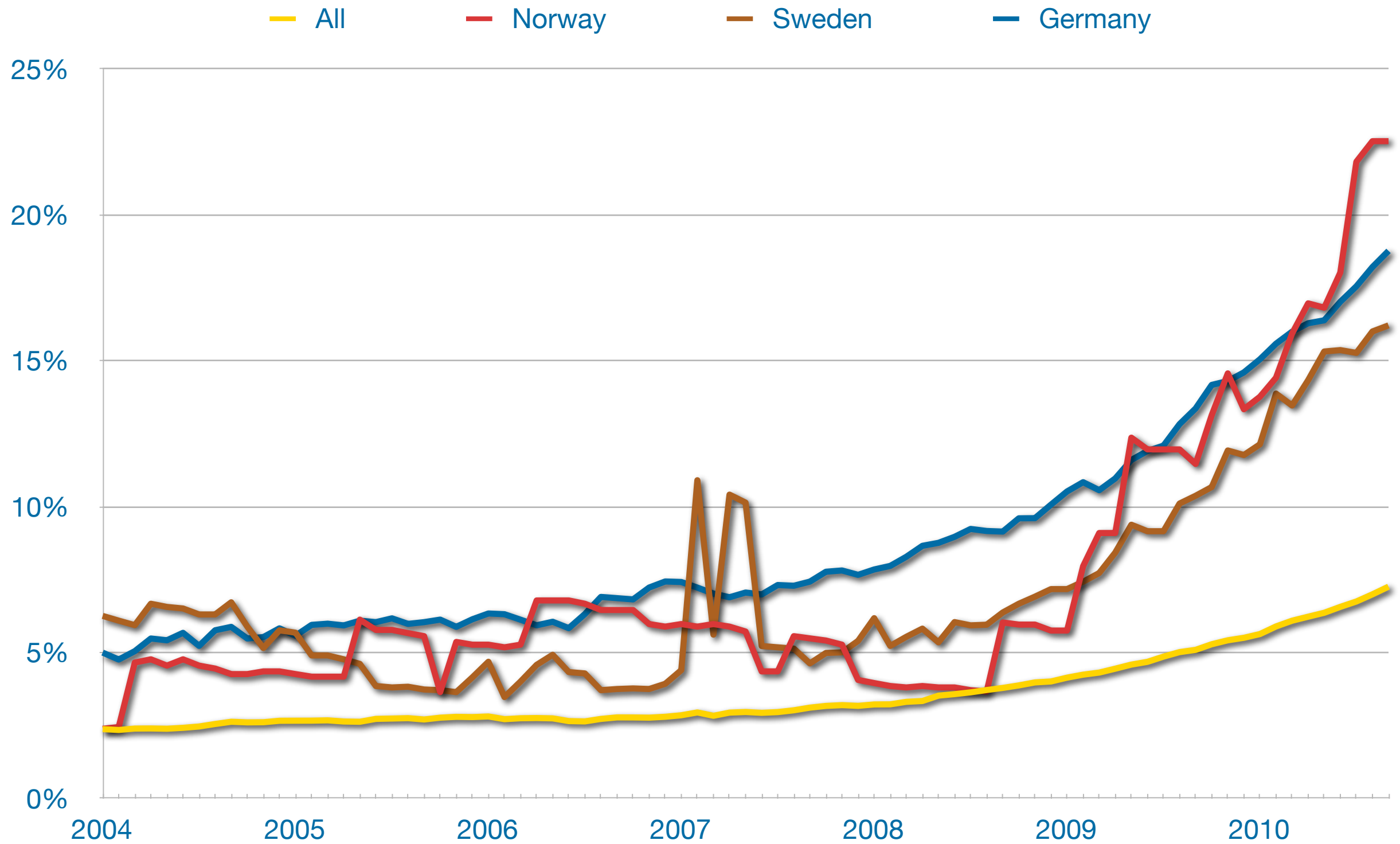


IPv6 RIPEness – Your Neighborhood

● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6



IPv6 Enabled Networks in Global Routing



What We Know

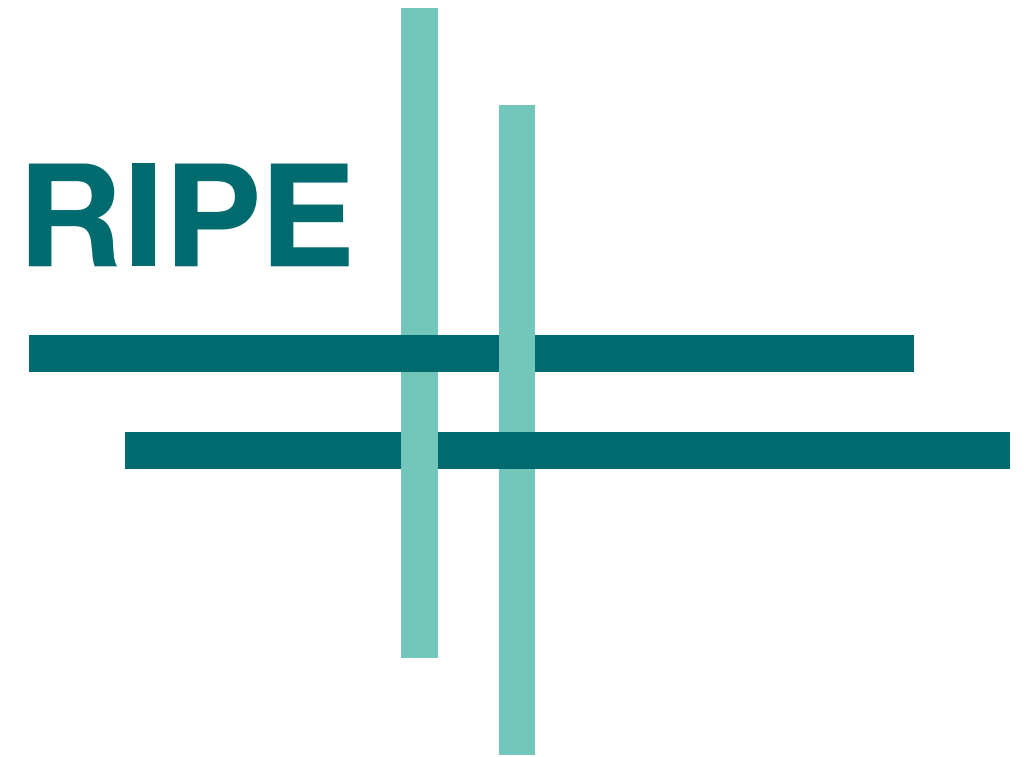
- RIRs have been consistently allocating around 10 /8s each year worldwide
- There were 12 /8s remaining at the IANA as of 18 October 2010 (less than 5%)
- Projected exhaustion of unallocated IPv4 pool:
April 2011

What We Are Doing

- Raise awareness of the problem
 - Different roles for different sectors
 - Industry, government, civil society, technical community
- Education
 - Technical knowledge for stakeholders that need it
- Ensure IPv6 is accessible to all
- Engage with ALL stakeholders

RIPE Community

- Policy forum
 - Not a legal entity
 - No official membership
 - Open to everyone
- No voting
 - Consensus decision making
- Work happens at meetings and on mailing lists:
 - Working Groups
 - Task forces



RIPE Policy Development Process

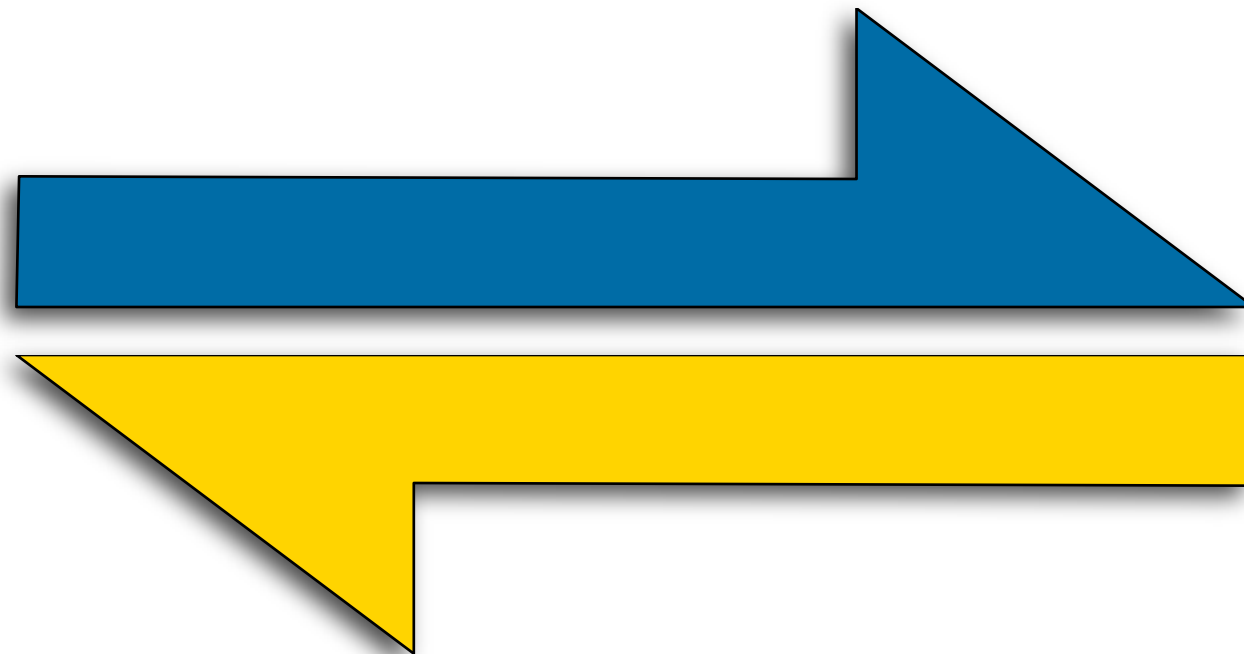
- Open
 - Anyone can participate
 - Policy meetings
 - Mailing lists
- Transparent
 - List discussions archived publicly
 - Meetings transcribed
- Developed bottom-up
 - By the Internet community
 - “Self-regulation” model

RIPE

Flow of Information

RIPE NCC Government
Roundtables

RIPE
community



Government

RIPE Cooperation Working
Group

RIPE NCC Roundtable Meetings

- Regular events since 2005
 - Held in Amsterdam and the Middle East (planning)
- Participants
 - 40+ Governments representatives from 18+ countries
- Topics covered
 - IPv6 deployment
 - IPv4 depletion
 - Internet governance
 - DNSSEC
 - Resource certification

RIPE Cooperation Working Group

- Formed in 2008
 - After work by the Enhanced Cooperation Task Force
- Focus on cooperation between private and public sectors
- Encouraging participation and input from stakeholders outside the traditional RIPE community

Other Fora

- Internet Governance Forum (IGF)
 - Participating since WSIS (2003) and first IGF (2006)
 - Co-organised IPv6 workshops at IGF 2009 and 2010
 - Currently planning for future IGF events
- International Telecommunications Union (ITU)
 - IPv6 Group (since March 2010)
 - NRO presence at Plenipotentiary 2010
- OECD
 - NRO contributed to the Ministerial Meeting in 2008
 - RIPE NCC is a founding member of the Internet Technical Advisory Committee (ITAC)

Other Fora

- European Commission
 - IPv6 Deployment Monitoring Survey 2009, 2010
 - IPv6 Workshops
 - 6Deploy
- MENOG/RIPE NCC IPv6 Roadshow
 - Standalone workshop hosted by a government or enterprise organisation
- Technical community events
 - NOGs, Internet Exchange Point (IXP) meetings

Join Us at the Next RIPE Meeting!

Rome, Italy – 15-19 November 2010

<http://ripe.net/meetings>



Questions?

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IPv6 ACT NOW
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