



IPv6 Developments in the RIPE NCC Service Region

Chris Buckridge, RIPE NCC

chrisb@ripe.net



Outline

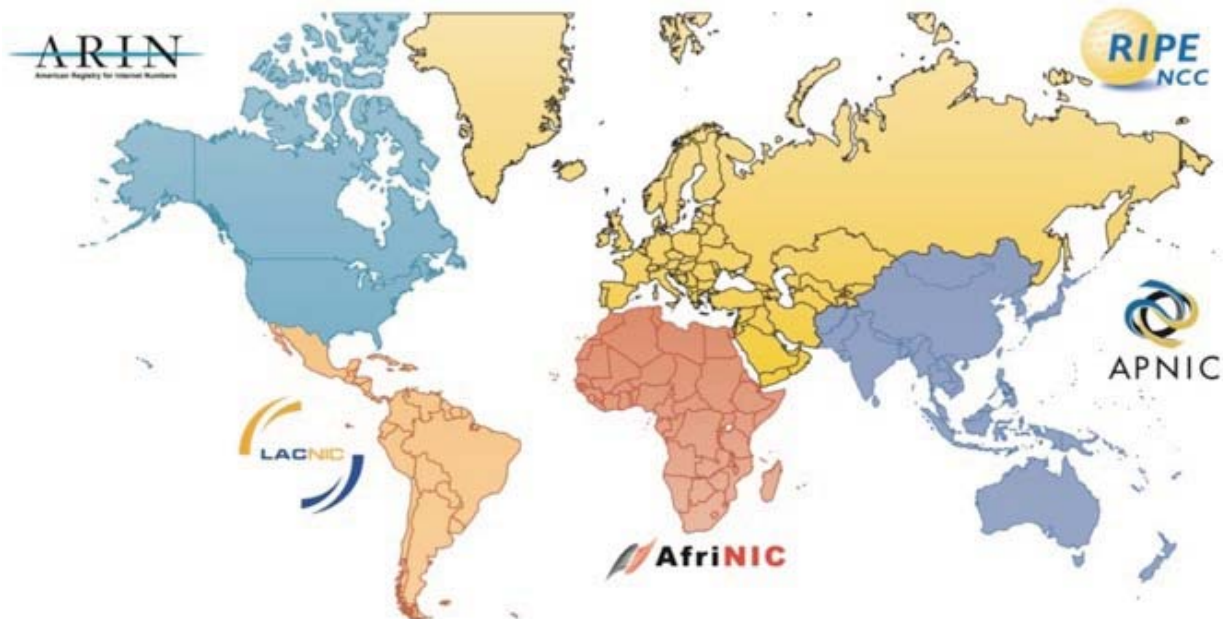
- About RIPE and the RIPE NCC
- What We Know: IPv4 and IPv6
- European Commission IPv6 Deployment Monitoring Survey
- Engaging the Community
 - IPv6 Act Now
 - RIPE NCC and the RIPE Community
 - Other Fora

RIPE NCC

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



The Regional Internet Registries





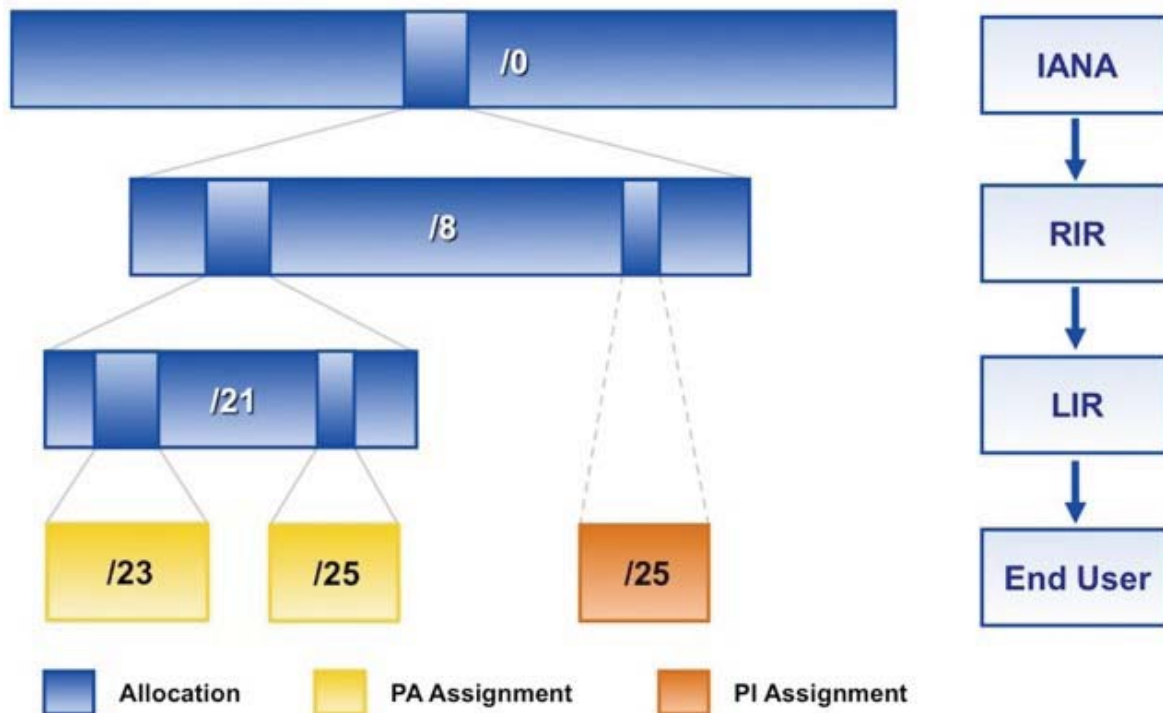
The Regional Internet Registries



Tuesday, 8 December 2009



IP Address Distribution



Tuesday, 8 December 2009



RIPE NCC Services

Member services

- Distributing resources
 - IPv4
 - IPv6
 - AS numbers
- Training courses
 - LIR
 - Routing Registry
 - DNS for LIRs
 - IPv6

Public services

- RIPE Database
- Reverse DNS
- ENUM (e164.arpa)
- K-root name server
- NetSense
- E-learning
- RIPE Labs
- IPv6 Act Now



- Policy forum
 - Not a legal entity
 - No official membership
 - Open to everyone
- One RIPE Chairman and Working Group Chairs
- No voting
 - "**consensus**" is the magic word
- Work happens at meetings and on mailing lists by:
 - Working Groups
 - Task forces





RIPE Meetings

- Biannually
 - Somewhere in the RIPE NCC service region
- Plenary discussions
 - Wide ranging topics
- Working Group meetings
 - More specific focus
- Policy discussions
- Exchange of views and information
- Interaction with other Internet stakeholders



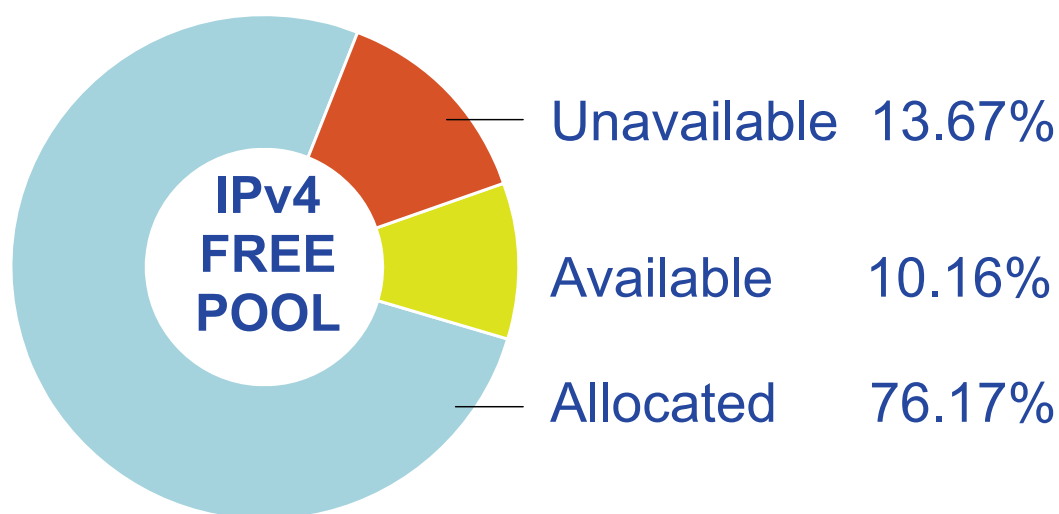
RIPE Policy Development Process

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

What We Know About IPv4 Exhaustion

Tuesday, 8 December 2009

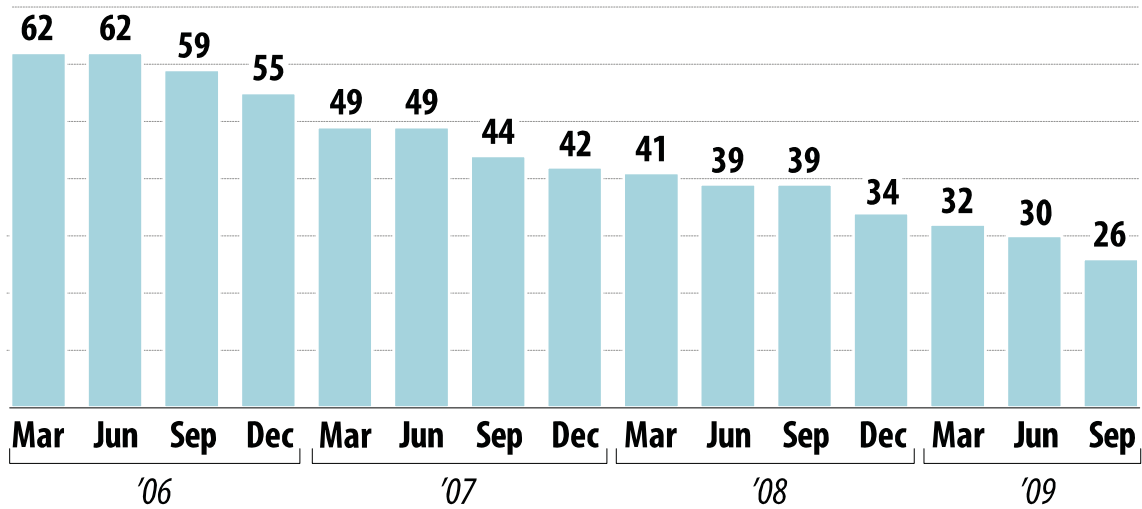
Available IPv4 /8s from IANA *



* as of September 2009

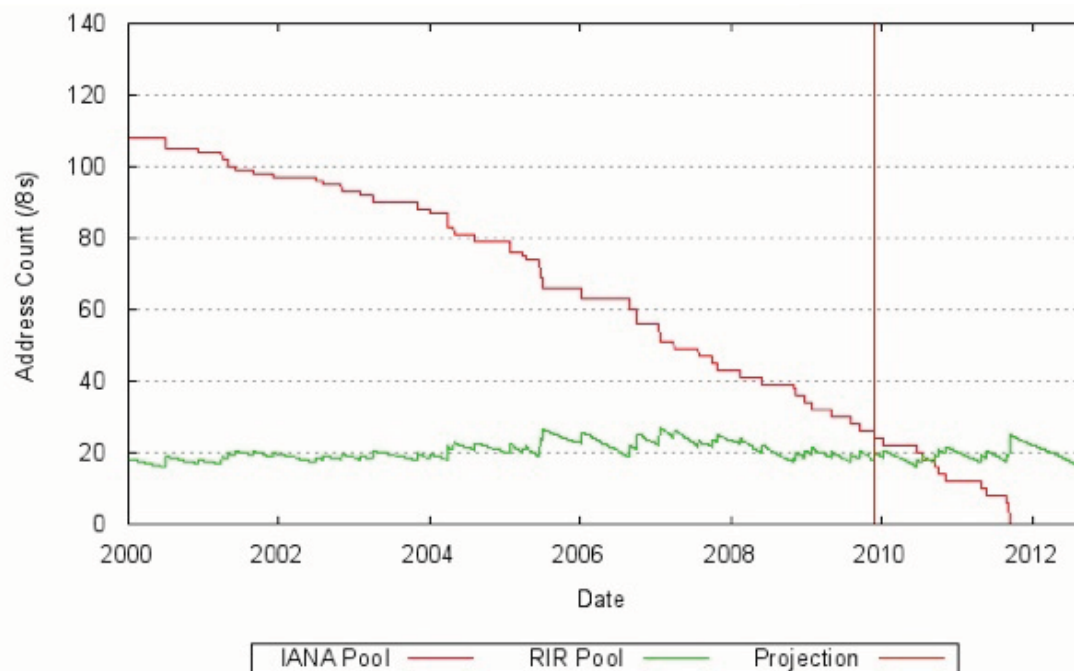
Tuesday, 8 December 2009

Remaining IPv4 /8s from IANA



Tuesday, 8 December 2009

IPv4 Address Pool Projections

Source: <http://www.potaroo.net/tools/ipv4/>

Tuesday, 8 December 2009



What We Know

- RIRs are consistently allocating around 10 /8s each year worldwide
- There were 26 /8s remaining at the IANA as of 30 September 2009
- Projected exhaustion of unallocated IPv4 pool:
September 2011
- IPv6 adoption is the only way to ensure continued Internet growth



EC IPv6 Deployment Monitoring Survey



IPv6



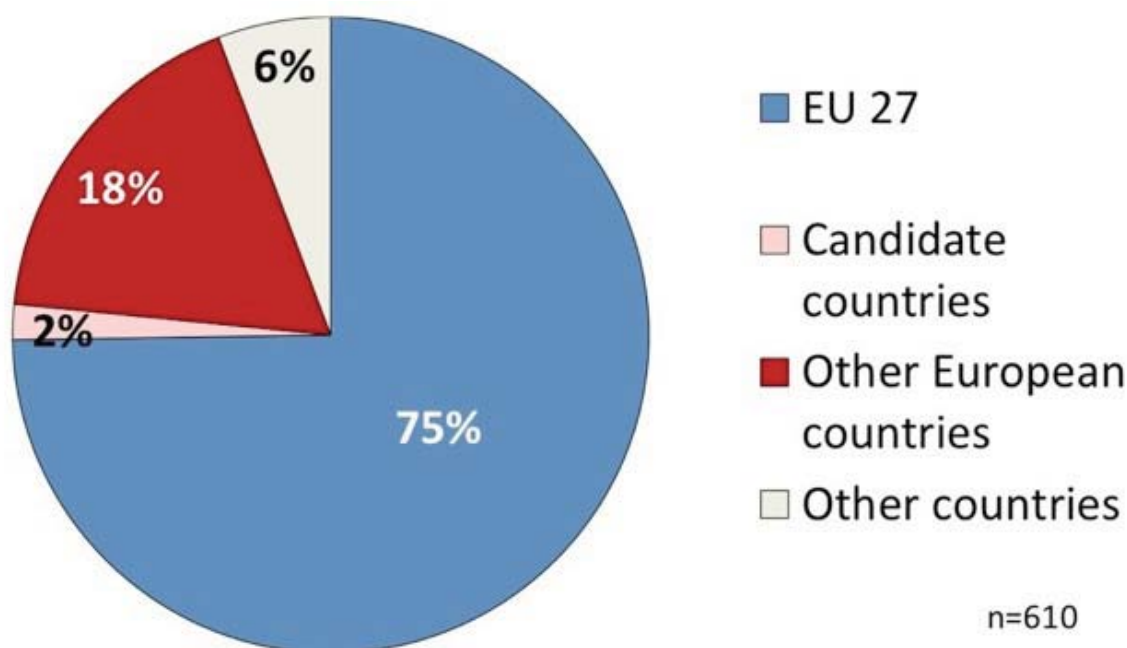


EC IPv6 Deployment Monitoring Survey

- Commissioned by the European Commission
- Developed by GNKS/TNO, in close consultation with RIPE community
- Conducted between 18 June - 10 July 2009
- Questions sent to RIPE community and RIPE NCC member mailing lists
- Respondents:
 - Total: 610
 - ISP: 380
 - EU: 456

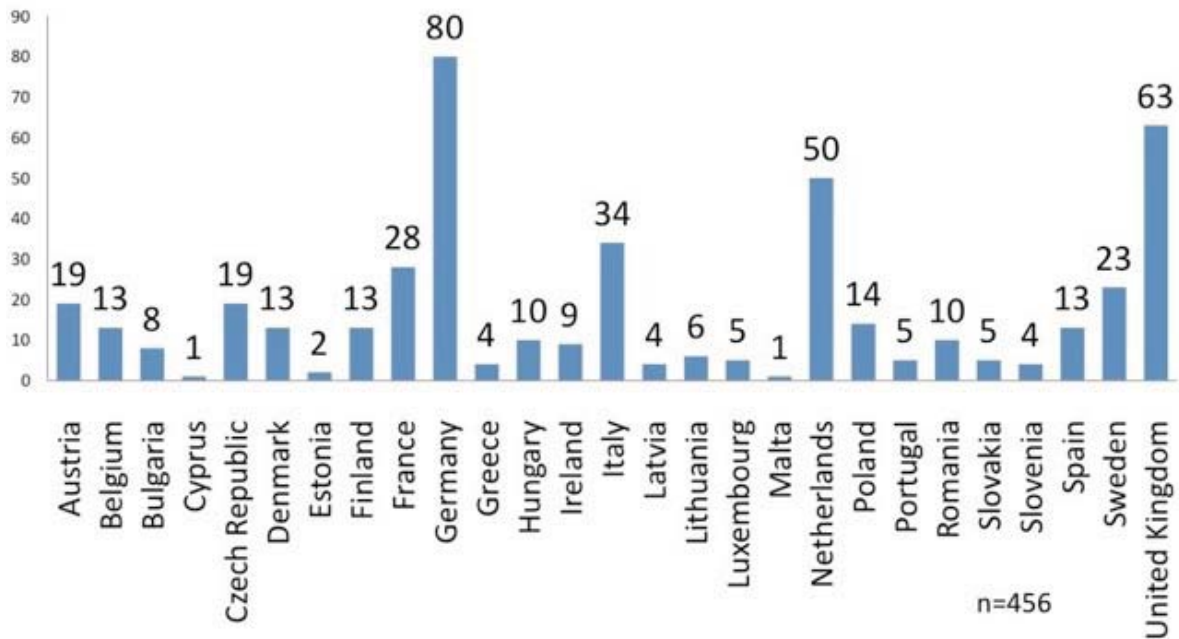


Respondents by Region





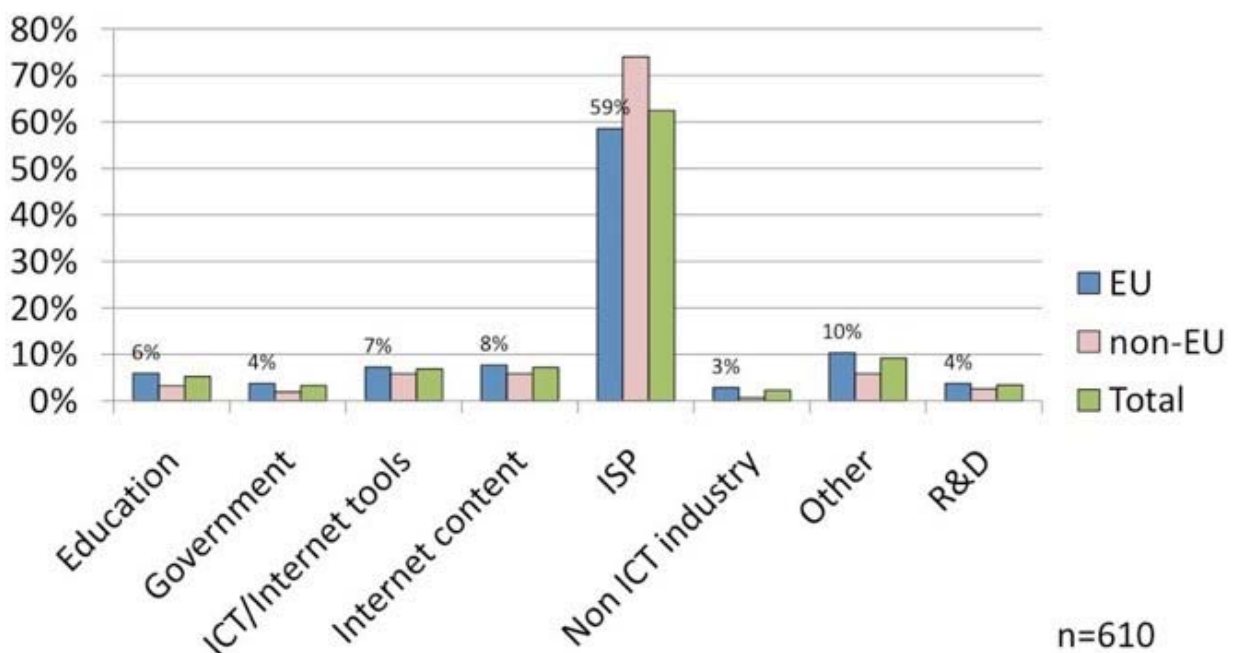
Respondents per EU Member State



Tuesday, 8 December 2009



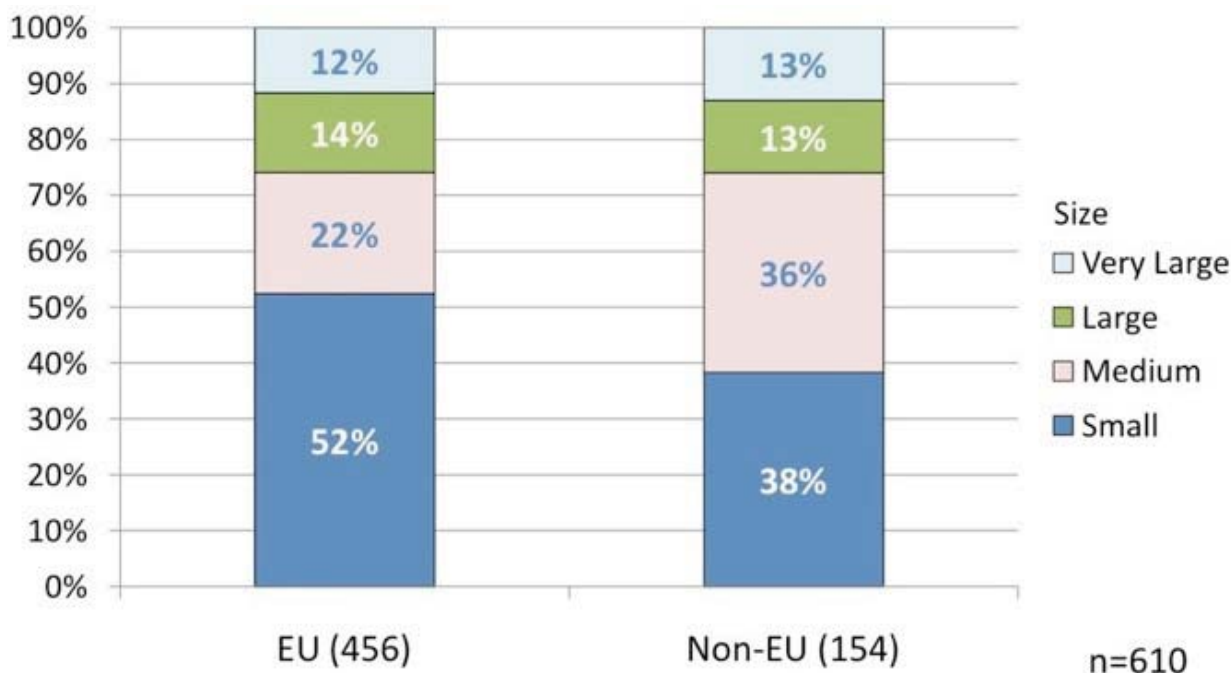
Respondent Categories



Tuesday, 8 December 2009



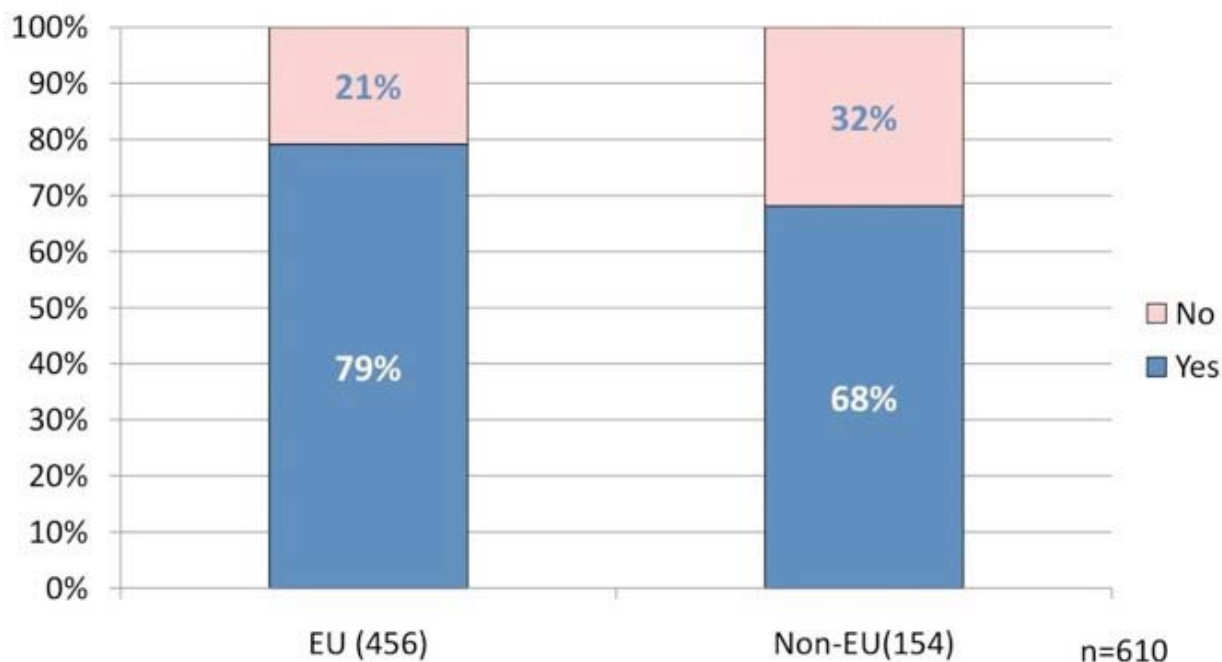
Organisation Size



Tuesday, 8 December 2009

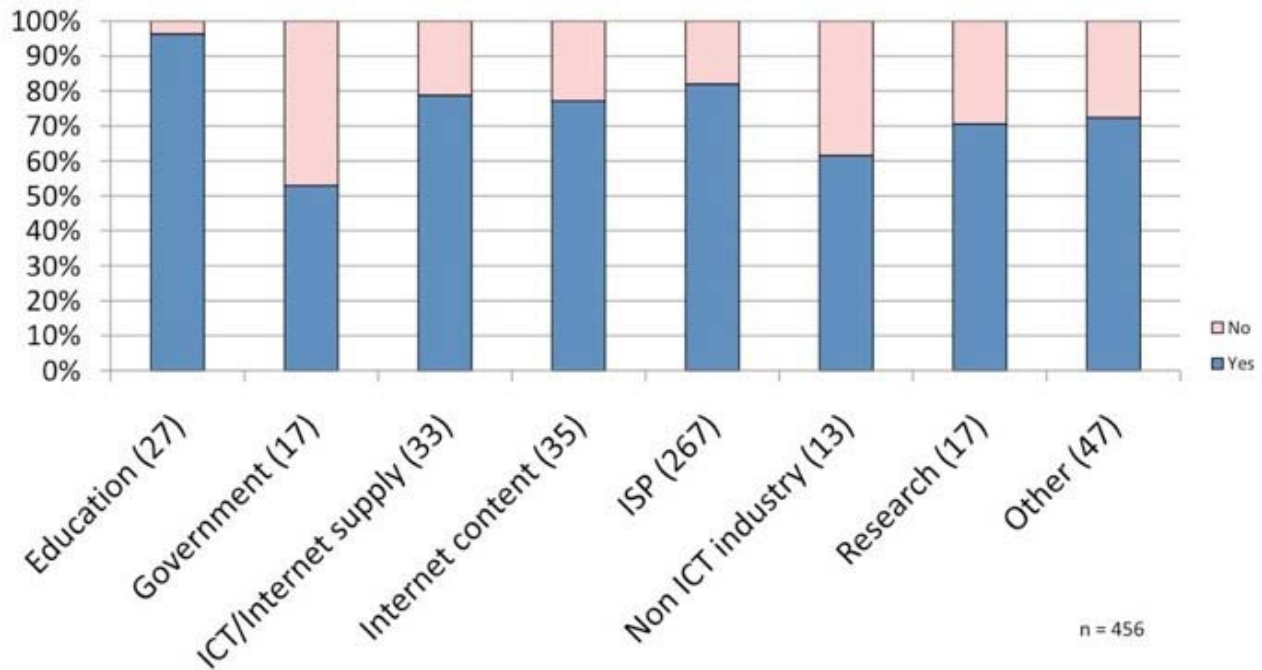


Currently Have an IPv6 Allocation (Or Currently Considering One)



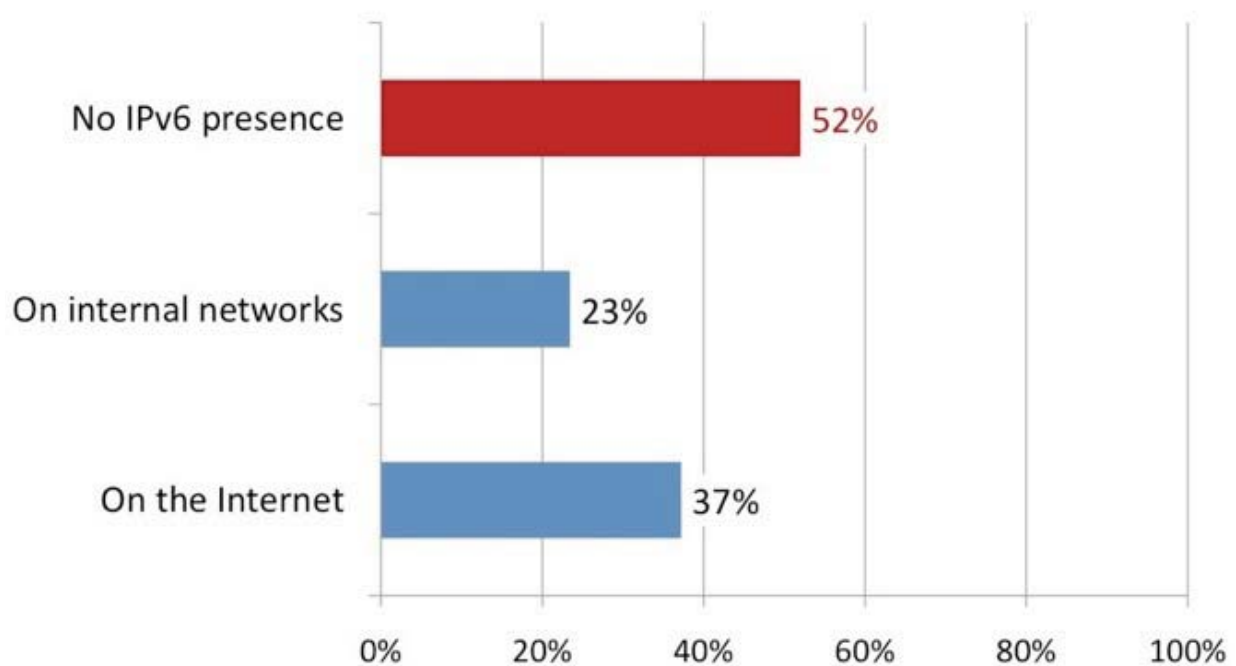
Tuesday, 8 December 2009

EU Organisations With or Considering an IPv6 Allocation (By Sector)



Tuesday, 8 December 2009

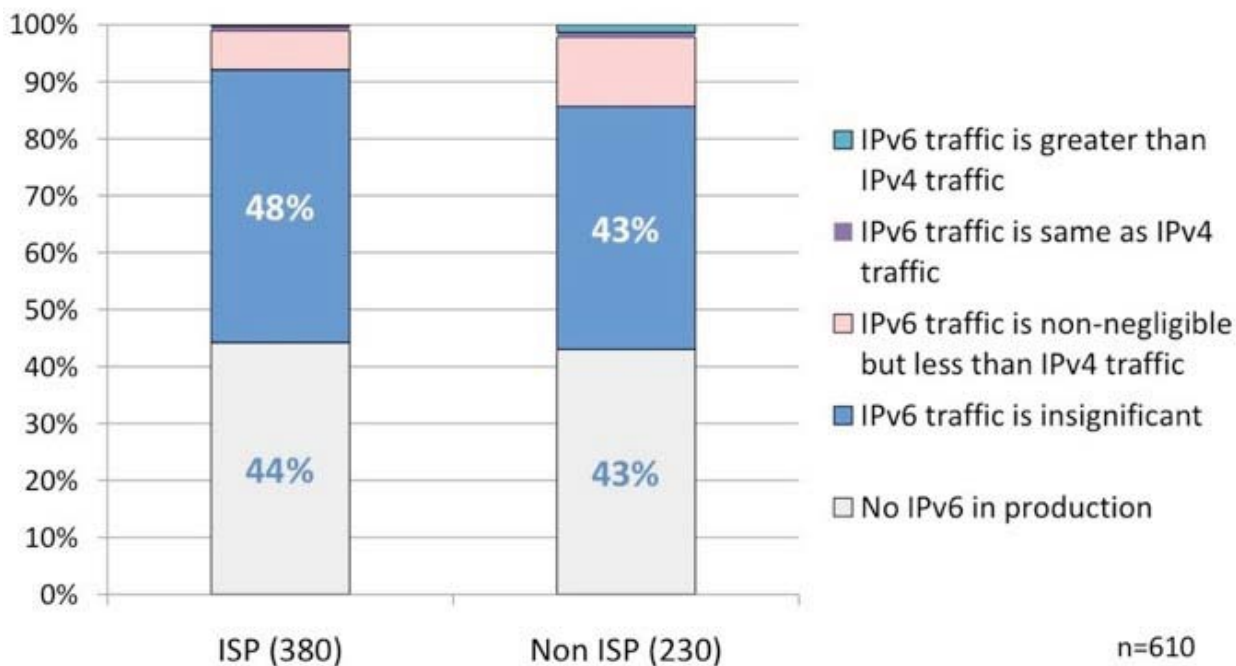
IPv6 Presence (All Respondents)



Tuesday, 8 December 2009



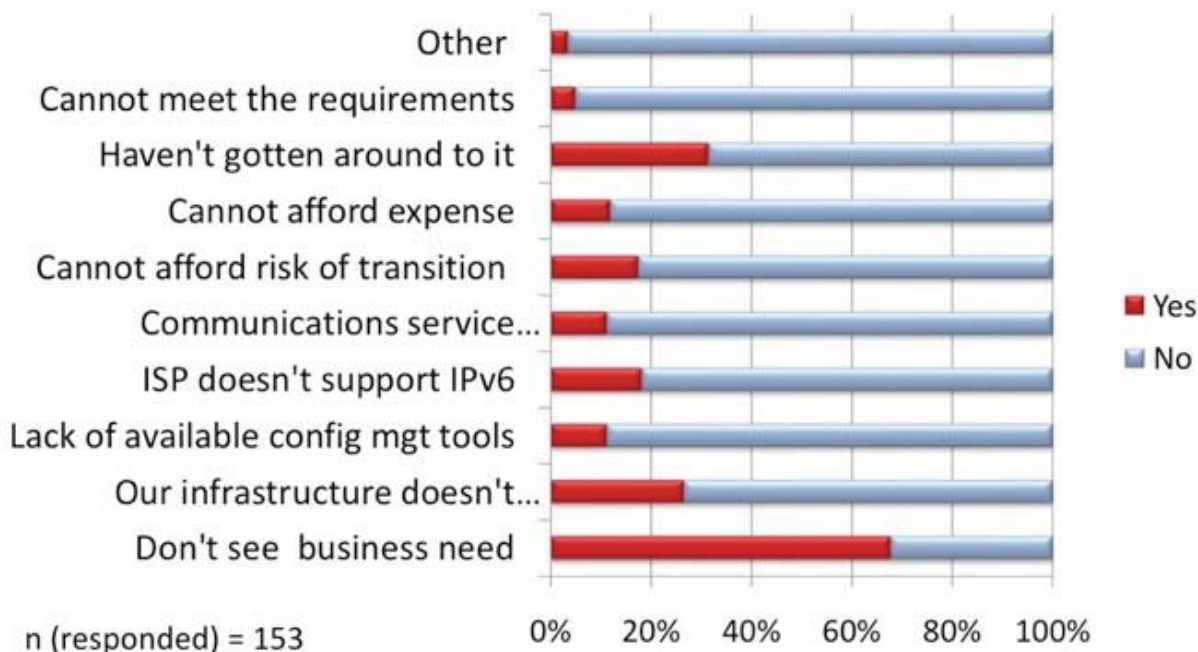
IPv6 vs IPv4 Traffic



Tuesday, 8 December 2009



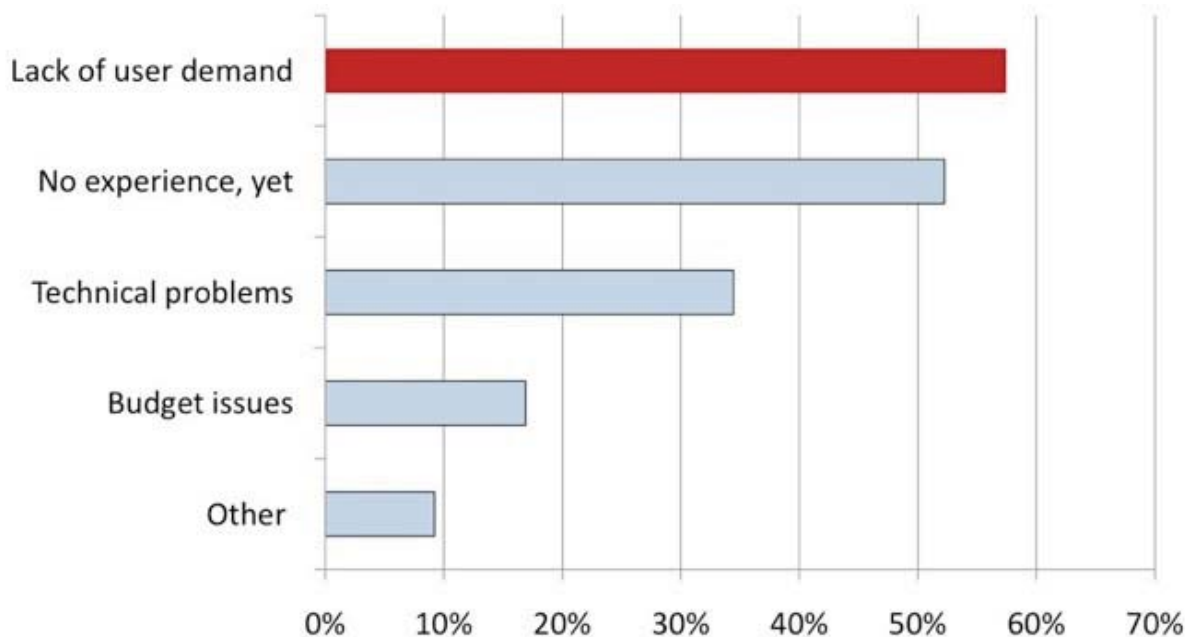
Reasons For Not Considering IPv6



Tuesday, 8 December 2009



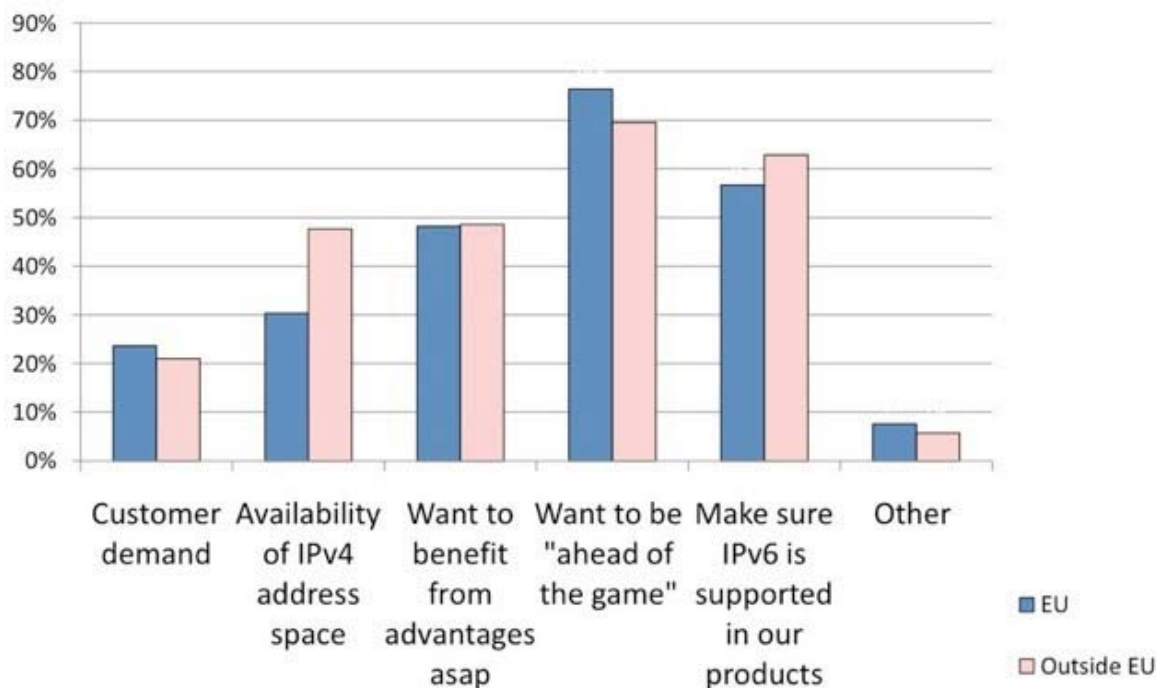
Biggest Problem Experienced in IPv6 Deployment



Tuesday, 8 December 2009



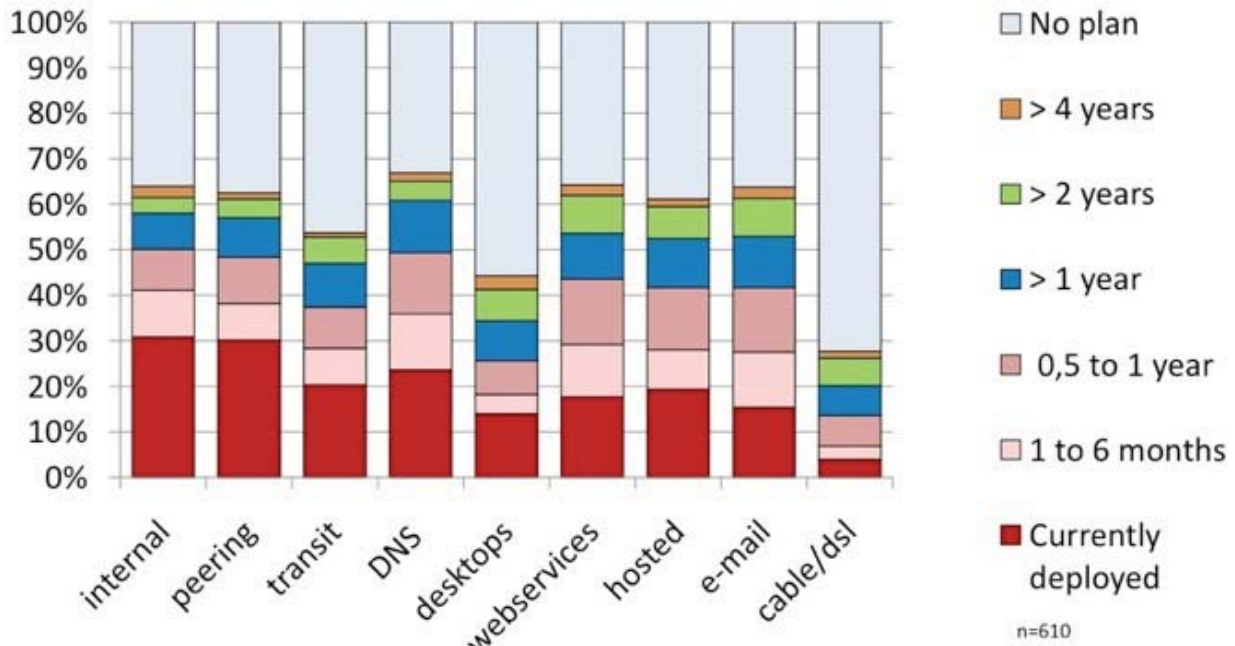
Main Drivers to IPv6 Deployment



Tuesday, 8 December 2009



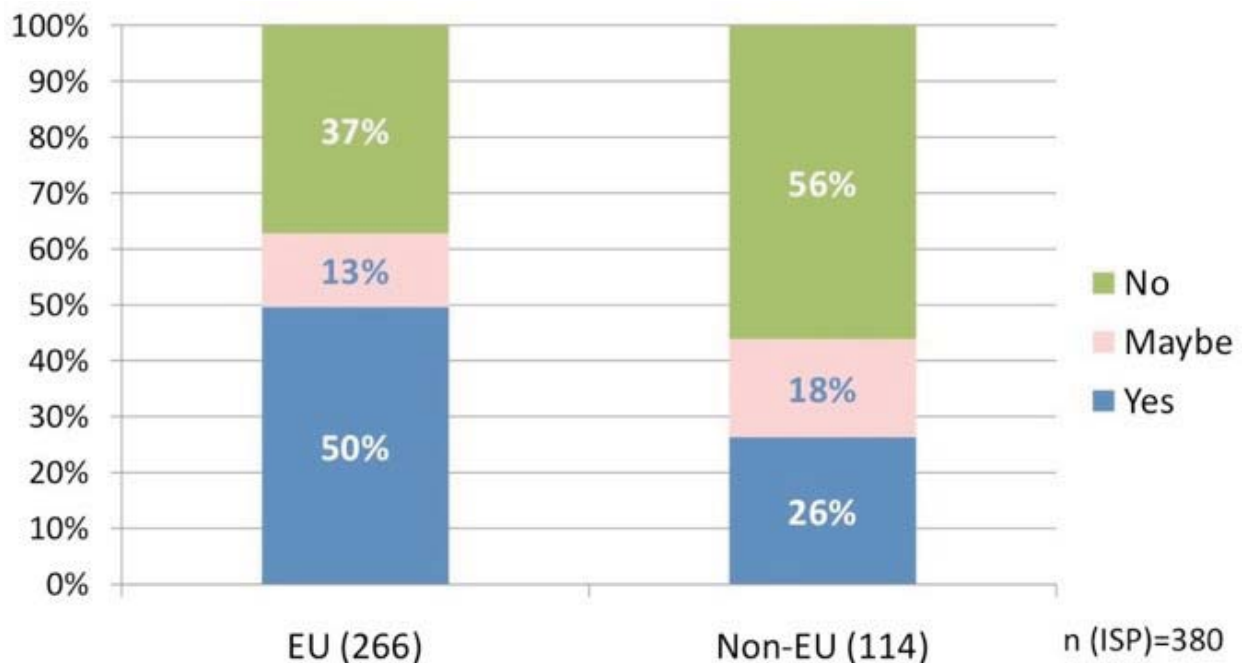
Planning IPv6 Deployment



Tuesday, 8 December 2009

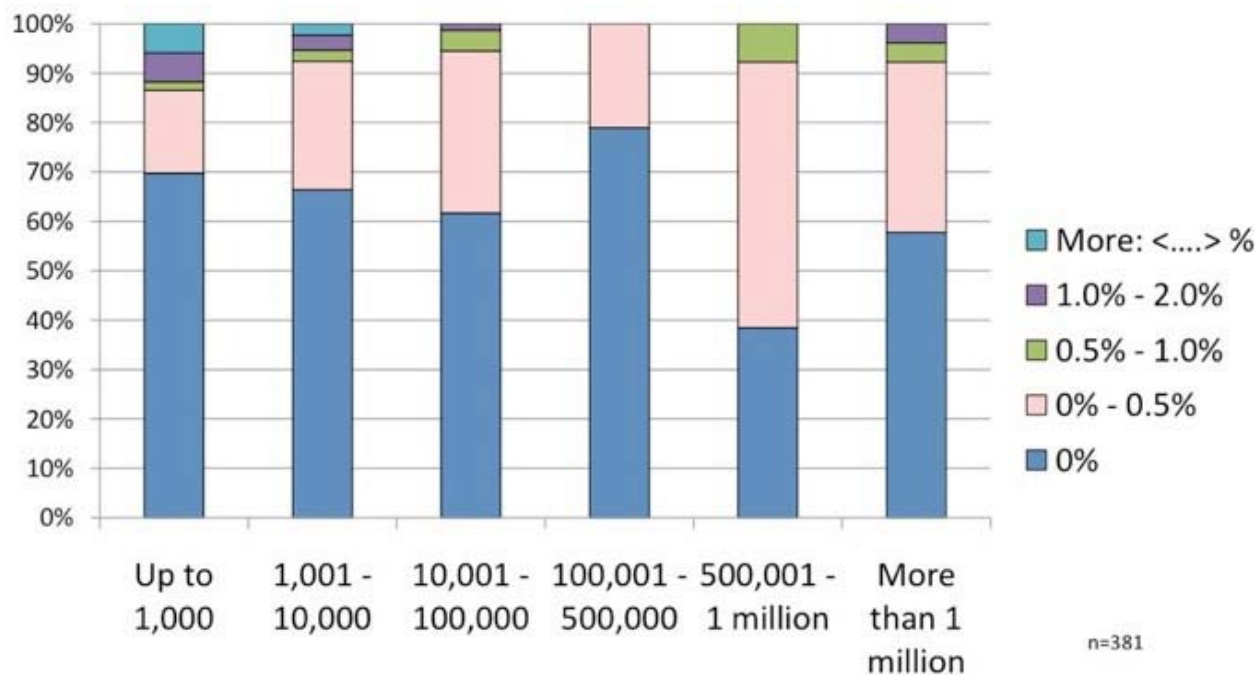


Do You Consider Promoting IPv6 Adoption to Your Customers?



Tuesday, 8 December 2009

Customer IPv6 Uptake (By ISP Size)



Some Conclusions (1)

- For 17% respondents, IPv6 is already real business, today
- IPv6 traffic still mostly insignificant
 - ISPs with <1000 customers seem to be leading
- ISPs:
 - 82% have, or are considering IPv6
 - 56% have IPv6 already in production
 - 37% of ISPs in Europe don't consider promoting IPv6 to their customers
- Nearly 50% of government respondents still not considering IPv6 adoption



Some Conclusions (2)

- Reasons not to consider IPv6:
 - Low business priority
 - Lack of user demand
- Hurdles:
 - Lack of vendor support
 - Lack of business case
 - Costs
 - Lack of availability of knowledge
- Main drivers for IPv6:
 - Being "ahead of the game"
 - Ensuring IPv6 is supported in our products
 - Benefiting from the advantages of IPv6 as soon as possible
- Customer demand is the main driver for 20% of EU respondents



The Future

- 91% of respondents supported conducting this survey again in 2010
- A similar survey has been conducted in the APNIC region: results to be presented at the next APNIC Meeting
- More information available at:

<http://www.ipv6monitoring.eu>

Engaging the Community

- IPv6 Act Now
- RIPE / RIPE NCC events:
 - RIPE IPv6 Working Group
 - RIPE Cooperation Working Group
 - RIPE NCC Government / LEA Roundtables
- Other fora:
 - Internet Governance Forum (IGF)
 - OECD
 - ITU events
 - European Commission (EC)

www.IPv6ActNow.org



The screenshot shows the homepage of the IPv6 Act Now website. At the top, there is a search bar and a navigation menu with links for Home, News, Info, Policy, Contact, and Forum. Below the navigation is a main content area with several sections:

- How To Act Now:** A central section with five colored boxes representing different user groups:
 - 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:** A section featuring a 3D bar and line chart showing data trends.
- Interviews:** A section featuring a video thumbnail of a man speaking.
- What is IPv6?:** A section with the text "IPv6 is the new way the Internet is numbered. Click here to find out more."
- What about IPv4?:** A section with the text "IPv4 numbers are running out. How long have we got left?"
- Forums:** A section with the text "IPv6 Act Now Forums. See what people are saying!"


At the bottom of the page, there is a footer that reads: "This website is operated by the RIPE NCC." and "Attribution: Non-commercial-Share Mike 3.0 Netherlands License."

IPv6 Act Now

- One-stop shop for IPv6 information, launched in June 2009
- Audience includes business, government and technical communities
- Sections include:
 - How To Act Now
 - Community interviews
 - Statistics
 - RSS feed of IPv6-related news and developments
 - Links and information

www.ipv6actnow.org

How To Act Now



Government

Government

High-speed Internet broadband is quickly becoming commonplace worldwide and many national governments have recently pledged to improve the reach of next-generation broadband networks.

There are undeniable socio-economic benefits to ensuring that as many people as possible have access to high-speed broadband. For example, the European Commission's 2009 Digital Competitiveness Report estimates that widespread broadband access would help generate up to two million new jobs in Europe by 2015.

Yet, universal broadband will put heavy strain on the infrastructure of the Internet, as all computers connected to the global network need an IP address. To safeguard the future growth of the digital economy, a timely adoption of IPv6 is essential.

Government organisations are influential forces for Internet growth. Leading by example, they play an important part in supporting the deployment of IPv6. Where governments encourage a landscape for sustainable Internet development, the private sector will follow.

Next: [Access and Availability For All](#)

Jump to:



Constanze Bürger of the German Government



IPv6 Act Now: Interviews



Martin Levy, Hurricane Electric, 2009

Tuesday, 8 December 2009



IPv6 Act Now: Interviews

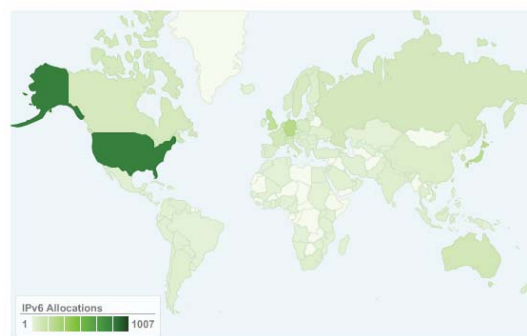


Martin Levy, Hurricane Electric, 2009

Tuesday, 8 December 2009

IPv6 Act Now: Statistics

- Statistics for:
 - Allocations
 - Routing
- Near-realtime
 - Draws on on data from NetSense and INRDB
 - Google Chart API



2009-11-23

Global IPv6 allocations



IPv6 routed on the Internet

RIPE IPv6 Working Group

- Launched in 1995 (first meeting at RIPE 22)
- New charter currently in approval process:

IPv6 is the next generation IP protocol. The IPv6 working group exists to promote IPv6 adoption.

The working group activities may be anything useful in helping people to deploy IPv6, and to manage IPv4/IPv6 co-existence. These activities include:

- Outreach
- Education
- Sharing deployment experiences
- Discussing and fixing operational issues

The working group will cooperate with operators and others, both inside and outside the networking industry, to share resources and combine efforts.



RIPE NCC Roundtable Meetings

- Twice a year
 - Eight meetings held since 2005
 - Currently held February and September in Amsterdam
- Participants
 - 40+ Governments representatives from 18+ countries
- Topics covered
 - IPv6 deployment, IPv4 depletion, Internet governance

www.ripe.net/meetings/roundtable/



RIPE Cooperation Working Group

- Formed in 2008
 - After work by the Enhanced Cooperation Task Force
- Forum for discussion within the RIPE community, focusing on cooperation between private and public sectors
- Intended to encourage participation from stakeholders outside traditional RIPE community

www.ripe.net/ripe/wg/cooperation/



RIPE NCC Training

- RIPE NCC face-to-face IPv6 training
 - Launched in 2009
 - One-day course about the need for IPv6 and includes basic information on how to plan deployment
- Currently developing an e-learning course



Other Fora

- Internet Governance Forum (IGF)
 - Participating since WSIS and the launch of the IGF
 - Co-organised an IPv6 workshop at IGF 2009 last month
- International Telecommunications Union (ITU)
 - Collaborating on various workshops and events
- OECD
 - NRO contributed to the Ministerial Meeting in 2008
 - RIPE NCC is a founding member of the Internet Technical Advisory Committee (ITAC)
- European Commission



Questions?

