RIPE Network Coordination Centre
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Member Update
Information bulletin for RIPE NCC members
www.ripe.net

The RIPE NCC Member Update is intended for LIR contacts.

If you are not the right person to receive this update, please forward it to the appropriate colleague.

AS Number Change Could Affect Internet Routing From 1 January 2009

Manufacturers have been urged to upgrade routers and network management software to support the use of 32-bit Autonomous System (AS) Numbers by 1 January 2009.

The Regional Internet Registries (RIRs), including the RIPE NCC, have warned that routers and network management software should be upgraded ahead of the increased distribution of 32-bit AS Numbers.

AS Numbers are a vital part of the Internet's core routing system, the Border Gateway Protocol (BGP). With existing 16-bit AS Numbers predicted to run out in early 2011, RIRs will issue 32-bit AS Numbers by default, unless otherwise specifically requested, from 1 January 2009, as the next phase of a transition from 16-bit to 32-bit numbers. Following a globally coordinated policy, the RIRs began allocating 32-bit AS Numbers by request only in January 2007; January 2009 marks the transition to allocating 32-bit AS Numbers by default.

Without timely support from vendors, network operators risk having routers and network administration systems that won't accept the expanded 32-bit number format. As such, the RIRs urge operators to verify that their vendors' routers will support 32-bit AS Numbers.

Geoff Huston, Chief Scientist at APNIC, the RIR for the Asia Pacific Region, expressed concerns over failure to prepare for 32-bit AS Numbers: "AS Numbers are often used to identify external relationships, set routing attributes, and manage traffic. Learning from our current experiences with IPv6 preparation issues, Internet engineers designed 32-bit AS Numbers to be backward compatible with much of the installed network infrastructure. But new entrants and networks that are expanding or merging will need new AS Numbers and, as of 1 January 2009, these will be, by default, 32-bit AS Numbers. If router software and support systems in critical parts of the Internet's infrastructure aren't upgraded by January, we'll encounter some significant network routing problems. We're extremely concerned that a lot of routers and network management software out there cannot and will not be able to recognise 32-bit AS Numbers".

An Autonomous System (AS) is a collection of networks, or routers, administered as a group sharing a common set of routing policies, each defined with a unique number, or AS Number. Massive Internet growth has depleted the existing pool of 16-bit AS Numbers (65,536 numbers in total). As a result, engineers have expanded the AS Number space from 16 bits to 32 bits, to include over four billion AS Numbers. Some routers do not currently support the use of 32-bit AS Numbers.

To help vendors understand what they need to do to provide 32-bit AS Number support and to help network operators find products that support 32-bit AS Numbers, APNIC has set up a special website at http://icons.apnic.net. •

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This publication is available online at: www.ripe.net/membership/newsletter

If you have any feedback about this publication, please contact: feedback@ripe.net

The mission of the RIPE NCC is to perform activities for the benefit of the membership; primarily activities that the members need to organise as a group, although they may compete with each other in other areas.

RIPE NCC Attends OECD Ministerial Meeting

On 17–18 June 2008, the RIPE NCC joined together with its industry partners to form the Internet Technical Community (ITC) and attended the OECD Ministerial Meeting on the Future of the Internet Economy in Seoul, South Korea. Representatives from the Regional Internet Registries (RIRs), the Internet Corporation for Assigned Names and Numbers (ICANN) and the Internet Society (ISOC) addressed the ministers and took part in panel sessions in order to encourage the engagement of all stakeholders in the development of the future Internet policy framework.

In addition, the ITC held a forum on 16 June that was designed to be a direct contribution to the ministers' work in three key areas: Creativity, Confidence and Convergence. The ITC also issued the "Memorandum on the Future of the Internet in a Global Economy", urging the ministers to ensure the future of the Internet as a force for continued social and economic development on a global scale. The ITC encouraged the OECD member states to support the development and adoption of emerging technologies and standards to help the evolution of the Internet, particularly through the uptake of IPv6.

The meeting closed with the ministers releasing the "Seoul Declaration for the Future of the Internet Economy", which expressed the common desire to promote the Internet economy and stimulate sustainable economic growth by working together with the private sector, civil society and the Internet community to secure the networks that underpin the Internet economy. The declaration also stated that the adoption of IPv6 would be encouraged, in particular through timely adoption by governments as well as large private sector users of IPv4 addresses, in view of the ongoing IPv4 depletion.

The ITC "Memorandum on the Future of the Internet in a Global Economy" can be found online at:
www.nro.net/archive/news/OECD_Technical_Memorandum.pdf •

See also: IPv6 at the OECD Ministerial Meeting, Seoul, June 2008 (page 8)

Life Cycle Management of IP Addresses

As IPv4 depletion issues bring IP address distribution under increasing scrutiny, it is worth re-examining how the Regional Internet Registry (RIR) system manages IP addresses. The RIRs form a bottom-up governed system for ensuring that a precious public resource (the IP address pool) is managed for the benefit of the whole community. This means more than simply acting as an IP address dispensing mechanism; the RIRs exist to manage the full life cycle of address space. By fulfilling this role, the RIRs help ensure that those who need Internet resources have the opportunity to receive them.

IP address life cycle management begins before addresses are handed over to an LIR and extends well beyond that point. RIPE NCC staff play an important role in checking that IP addresses are given out on the basis of need, ensuring that allocation details of the addresses given out are recorded accurately in the RIPE Database, while following the policies approved by the RIPE community. When LIRs close down, are acquired, or no longer need the addresses allocated to them, the RIPE NCC also has procedures for reclaiming address space that is unannounced and unused. And it is through the RIR resource management system that holders of "legacy space" (address space handed out before the development of the RIR system) are being encouraged to register or return unused addresses.

Management of the full Internet resource life cycle is particularly important as the pool of unallocated IPv4 space approaches exhaustion. But even with the deployment of IPv6, technical aspects of the Internet, particularly routing, mean that this kind of resource management will continue to be vital to the ongoing operational stability and development of the Internet.

For more information on the RIPE NCC's procedures for managing IP addresses see:

IPv4 Address Allocation and Assignment Policies for the RIPE NCC Service Region
www.ripe.net/ripe/docs/ripe-424.html
IPv6 Address Allocation and Assignment Policy
www.ripe.net/ripe/docs/ripe-421.html

To get involved in the development and maintenance of these policies, you can attend a RIPE Meeting, or participate in any of the public RIPE mailing lists. •

Certification of Internet Number Resources

Over the next few years, the Internet landscape is likely to change significantly. Issues such as IPv4 depletion, the possibility of a growing demand for resource transfers and an increasing potential for conflicts over address space all need to be addressed if the Internet is to continue to run effectively. Consequently, the RIPE NCC has been focusing on the administrative, technical and operational issues involved in providing a more robust registry function. Enhanced registry activities, such as certification, will enable the RIPE NCC to ensure its registration services meet the changing demand of RIPE NCC members.

Emerging from the RIPE NCC's focus on enhancing its registry functions, the certification of Internet number resources has been a focus area of the RIPE NCC's activities for several years. The aim of these activities is to design, test and implement a reliable mechanism for establishing the association between Internet number resources (IPv4 and IPv6 address blocks as well as AS Numbers) and the holders of these resources (RIRs, LIRs, ISPs and end entities).

During 2008, the RIPE NCC, together with the RIPE Certification Task Force, has been working to define a certification system that incorporates the technological, administrative and procedural elements necessary to certify Internet number resources. The resulting web-based application has been extensively evaluated by a group of testers formed at the RIPE 56 Meeting in Berlin. Their feedback and comments have been used to fix potential problems and to identify subsequent features that the certification system should provide.

As a result, the RIPE NCC will present a beta version of the certification application at RIPE 57 in Dubai. At this stage, the aim of the application is to provide a web-based portal that:

- Enables RIPE NCC members to request certificates for their IPv4 and IPv6 Provider Aggregatable (PA) resources.
- Enables RIPE NCC members to manage Route Origin Authorisations (ROAs) for their PA address space
- Provides a public web interface for certificate and ROA validation
- Provides a public repository of certificates and ROAs
- Handles key roll-overs and revocation

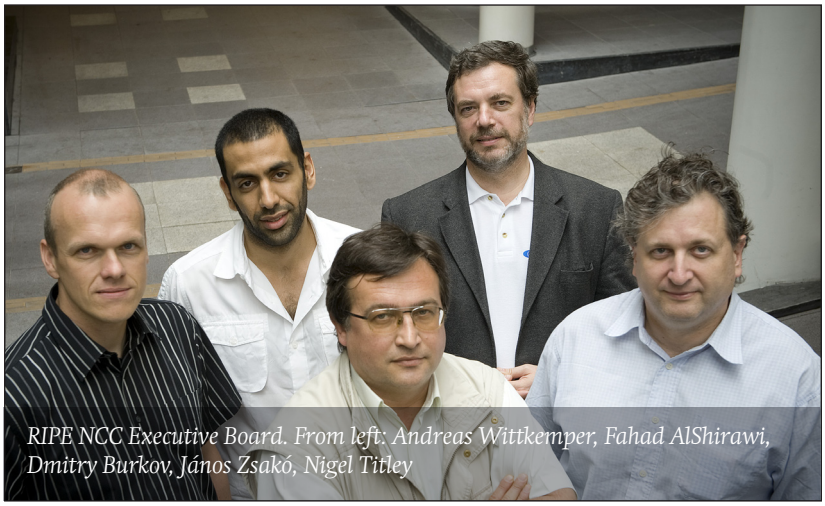
The RIPE NCC plans to progressively add further functionality after the October 2008 release of the certification application. This will work according to a schedule and method to be decided during discussions at RIPE 57. •

RIPE NCC General Meetings

RIPE NCC General Meeting May 2008

The RIPE NCC General Meeting (GM) May 2008 was held on Wednesday, 7 May 2008 adjacent to the RIPE 56 Meeting at the Hotel Palace in Berlin, Germany. Fahad AlShirawi, 2Connect, and Andreas Wittkemper, Verizon Business, were elected onto the RIPE NCC Executive Board. The RIPE NCC would like to express its gratitude to Kees Neggers and Jim Reid for the work they performed during their terms on the RIPE NCC Executive Board.

The RIPE NCC members at the GM unanimously approved the 2007 Financial Report of the RIPE NCC. They also approved the addition of Jaap Akkerhuis, Olaf Kolkman and Remco van Mook to the RIPE NCC Arbitration Pool: www.ripe.net/membership/arbitration.html



RIPE NCC Executive Board. From left: Andreas Wittkemper, Fahad AlShirawi, Dmitry Burkov, János Zsakó, Nigel Titley

Upcoming RIPE NCC General Meeting October 2008

The next RIPE NCC GM will be held on Tuesday, 28 October 2008 adjacent to the RIPE 57 Meeting at the JW Marriott Hotel in Dubai, United Arab Emirates. All members of the RIPE NCC are encouraged to attend. You must register prior to the meeting.

More information about the RIPE NCC General Meeting is available at: www.ripe.net/membership/gm

Members can discuss membership issues prior to the GM by using the RIPE NCC Membership Discussion List. RIPE NCC members with an LIR Portal account can subscribe to this list through the RIPE NCC LIR Portal at: https://lirportal.ripe.net

Archived messages from this list are available at: www.ripe.net/maillists/ncc-archives/members-discuss/ •

RIPE NCC Roundtable Meeting September 2008

A RIPE NCC Roundtable Meeting for Governments and Regulators will take place on Monday, 29 September 2008 at the Sheraton Amsterdam Airport Hotel.

Roundtable Meetings are one-day events designed specifically to keep governments and regulators informed on current issues surrounding the governance and operation of the Internet. They also provide guidance as to how governments and regulators can participate in the development of policies around these issues.

At these meetings, participants discuss Internet number resource management. These meetings also foster dialogue between the public and private sector to ensure the future stability of the Internet.

The 2008 meeting will focus on transfers of Internet address space. Speakers will include the RIPE NCC Managing Director, Axel Pawlik, and a range of government representatives, regulators and industry partners from Europe, the Middle East and parts of Central Asia.

More information about the meeting is available at:
www.ripe.net/meetings/roundtable/sept2008 •

RIPE Cooperation Working Group

The formation of the RIPE Cooperation Working Group was announced to the community in September 2008, and the working group will meet for the first time on Thursday, 30 October at the RIPE 57 Meeting in Dubai. This working group is an important forum in which to discuss cooperation between the many stakeholders in the Internet community, including business, government, regulators and civil society. It follows on from the work of the Enhanced Cooperation Task Force, community discussions at the RIPE 56 Meeting in May 2008, and the recognition that a more open dialogue between all stakeholders is vital to ensuring the continued stability of the Internet.

A draft charter for the working group and a link to subscribe to the mailing list can be found at:
www.ripe.net/ripe/wg/cooperation

As with all RIPE Working Groups, both the name and charter of the Cooperation Working Group are open for discussion, whether on the mailing list or at RIPE Meetings.

Co-chairs for the Cooperation Working Group will be Martin Boyle, from the .uk registry Nominet, and Maria Häll, from the Government Offices of Sweden.

Everyone with an interest in multistakeholder cooperation is encouraged to participate in this new working group, either on the mailing list or by attending the relevant session at RIPE 57. •

ARIN
American Registry for Internet Numbers

ARIN Update

ARIN Getting the Word Out – Migrate to IPv6

Since the May 2007 ARIN Board of Trustees advisory to the Internet community, ARIN continues to find new ways to spread the message that migration to IPv6 is necessary for any applications that require ongoing availability of contiguous IP number resources.

Here are a few of our activities:

- Creation of an IPv6 wiki, a growing repository for sharing experiences and data open to everyone
- A community-wide IPv6 penetration survey conducted with the Cooperative Association for Internet Data Analysis (CAIDA)
- A native IPv6 network was featured at ARIN XXI to allow attendees to experiment with IPv6 end sites on the Internet

See and read the interesting results of all of these at:
www.getipv6.info

ARIN remains committed to outreach beyond our normal audiences. Recently ARIN has participated at the following events: The Corporation for Education Network Initiatives in California, the 2008 Nonprofit Technology Conference, VON.x (an IP communications conference), Federation of Internet Solution Providers of Americas regional meeting, Federal Office System Exposition, the Rocky Mountain IPv6 Summit, and ISPCON (an Internet Service Provider Conference).

Look for ARIN to continue to broadcast its IPv6 migration message through participation in new events, media contact and the facilitation of technical discussions in the community. •

AfriNIC Update

AfriNIC-8 Public Policy Meeting

AfriNIC, the Regional Internet Registry for Africa, held its eighth Public Policy meeting from 29 May–6 June 2008 at the Golden Tulip Farah Hotel in Rabat, Morocco.

The meeting, held in conjunction with AfNOG (www.afnog.org), Afren (www.aau.org) and INET Africa (www.isoc.org), was a good opportunity for the African Internet community to learn, network and discuss policies related to IP number resource allocation in the region. In his opening address, Prof. Driss Bouami, Chairman of Ecole Mohammedia d'Ingenieurs, one of Northern Africa's leading engineering universities, paralleled AfriNIC's training and educational missions to that of the school. Indeed, the workshops allowed IT professionals from the continent to share best practices and illustrated the strengthening partnerships of AfriNIC with academic and research institutions and the community.

One policy ("Global Policy for the Allocation of the Remaining IPv4 Address Space") reached consensus. As for other policies not reaching consensus, more discussions will follow on the policy mailing list (rpd@afrinic.net).

The meeting also included two days of hands-on IPv6 training attended by 50 delegates. The training, provided by Cisco Systems, covered all aspects of IPv6 deployment and was a good opportunity to train African trainers to whom AfriNIC will have recourse in the future.

Next Meeting, AfriNIC-9

The Ninth Public Policy Meeting (AfriNIC-9) will be held from 22–28 November 2008 in Addis Ababa, Ethiopia. For regular updates, please check: www.afrinic.net

6deploy

Pursuing its objective of improving the capacity of IT managers in Africa, AfriNIC organised a training session on the deployment of IPv6 networks.

The training proved to be a huge success with more than 100 technical experts from English-speaking countries in Africa gathering from 17–20 June in Nairobi under the aegis of the Network Operations Center of Kenya.

The training session benefited from the support of the European Union through the 6deploy initiative, which promotes IPv6 awareness and training in developing countries.

Since 2007, AfriNIC has conducted IPv6 training sessions in at least 15 countries with more than 580 participants, and with a goal to bring IPv6 awareness to all countries in Africa by the end of 2009. More information on IPv6 training is available at:
www.afrinic.net/training/ipv6training.htm •

Internet Assigned Numbers Authority

Making IANA's Registries Available in XML

The Internet Assigned Numbers Authority (IANA) publishes and maintains over 800 registries, which contain lists of names, numbers and protocol parameters for a wide range of standards and services developed by the IETF and others.

Because there are so many registries, many different sorts of information have been published in a variety of templates and styles. But they have mostly been published in one medium, plain ASCII text, which is not well suited to highly structured documents. It is also not suitable when information needs to contain names and addresses, or other information, which cannot be written in plain text.

The limitations of plain text mean that it has not been easy for computers to automatically parse IANA's registries and it has not been possible to properly spell many registrants' and contacts' names.

As announced at RIPE 56 in Berlin, IANA staff concluded a program to transform all its registries into XML in the summer of 2008. The new registries have standardised templates, allow structured information to be published in ways that are easy for computers to read and allow registrations to include any valid Unicode characters.

But plain text format won't be going away. The XML will be converted into human-friendly HTML and plain text formats and those formats will always be published on the IANA website.

Over the next year, IANA staff will continue to work on enhancements to the IANA registries. Planned improvements include services to notify subscribers of changes in registries they want to monitor.

A full list of registries can be found on the IANA website at:
www.iana.org/protocols •

RIPE NCC Information Services: A Trusted Source of Data

As a neutral and not-for-profit organisation with more than 15 years experience of developing tools to measure IP networks, the RIPE NCC has established itself as a widely trusted source of unbiased data on Internet operations and trends. The RIPE NCC runs various projects to provide a range of data, supporting the Internet community as a whole and assisting its members with useful operational resources.

Hostcount

The RIPE NCC can trace its Information Services back to 1990, when the first RIPE region Hostcount project began to collect data on how many allocated IP addresses were actually in use. Operating continuously for 18 years, Hostcount is possibly the longest running Internet measurement project in history. In 2008, the RIPE NCC will make the final switchover to new measurement software that will increase the reliability and accuracy of Hostcount.
www.ripe.net/hostcount

Routing Information Service

The Routing Information Service (RIS), launched in 1999, collects Internet routing data over Border Gateway Protocol (BGP) from more than 600 peers at 16 diverse global locations. We store all of the data and provide powerful public query tools to search it. The data is frequently used for analysis of operational routing issues, as well as research into significant Internet events. The RIS data was used in the RIPE NCC analyses of the Middle Eastern cable cuts and the YouTube incident earlier this year.
www.ripe.net/ris

Test Traffic Measurements

In 2000, the Test Traffic Measurements (TTM) service went live. TTM allows users to monitor their connectivity to many other parts of the Internet in near realtime. TTM has been improved over the past 12 months and now offers many new features, including ad hoc tests that allow subscribers to monitor services inside their network from measurement points around the globe.
www.ripe.net/ttm

DNS Monitoring

Our newest service, DNS Monitoring (DNSMON), has been operating since 2004 and provides the public with access to data about the stability of the global DNS root server infrastructure. DNSMON is the only service of its kind, and it is frequently referred to in press reports about Distributed Denial of Service (DDoS) attacks on the root. The service is also open to TLD registry operators.
http://dnsmon.ripe.net

All of these services provide public access to data and tools, allowing users to start using them immediately. For more information about the RIPE NCC's Information Services, please see:
http://is-portal.ripe.net •

RIPE NCC Membership Survey 2008

The RIPE NCC is conducting its third Membership Survey. These surveys enable our members to tell us what they think about our services and activities.

The first Membership Survey was carried out in 2002 and the second was conducted in 2005. The feedback we gathered from these surveys allowed the RIPE NCC to pinpoint the specific improvements in services and activities that members wanted to see. They also provided us with a wide range of suggestions for developing the services we offer.

By participating in the 2008 Membership Survey, RIPE NCC members can once again play an important role in helping us to evaluate our current operations and plan for future services and developments. The Membership Survey is conducted by a third party to ensure anonymity.

An email with a link to the 2008 Membership Survey will be sent to the LIR contact email address provided for each LIR. Please take the time to complete this survey.

You can find more information about the 2008 Membership Survey and see the results of previous RIPE NCC surveys at:
www.ripe.net/membership/survey •

RIPE Policy Development Process: March–August 2008

Submitted Proposals

From March to August 2008, two new proposals were submitted.

1. *Global Policy for the Allocation of the Remaining IPv4 Address Space, 2008-03*
Proposed by Roque Gagliano, Francisco Obispo, Hytham EL Nakhal, Didier Allain Kla and JPNIC IPv4 Countdown Policy Team

This proposal is to distribute a single /8 to each Regional Internet Registry (RIR) at the point when the IANA free pool is left with five /8s. During RIPE 55, the proposals 2007-06 (Global Policy for the Allocation of the Remaining IPv4 Address Space) and 2007-07 (End Policy for IANA IPv4 Allocations to RIRs) were discussed and the community advised the authors to come up with a joint proposal instead of having two similar proposals in the PDP at the same time. The authors followed up on this recommendation, withdrew these proposals and authored this new joint proposal (2008-03) in March 2008.

Please note – as of early September 2008, this proposal has been accepted in the RIPE region. It has already been adopted in the AfriNIC, ARIN and LACNIC regions and has reached the last call for comments in the APNIC region.

The details of the proposal can be found at:
www.ripe.net/ripe/policies/proposals/2008-03.html

2. *Using the Resource Public Key Infrastructure to Construct Validated IRR Data, 2008-04*
Proposed by Randy Bush and Kurtis Lindqvist

This proposal is to introduce a new registry that augments IRR data with the formally verifiable trust model of the Resource Public Key Infrastructure (RPKI) and provide ISPs with the tools to generate an overlay to the IRR which is much more trustable. During RIPE 56, the proposal was discussed in the Routing WG as well and it was suggested that the proposal could be withdrawn while an operational implementation proposal is discussed in the WG. This is currently a work in progress. The details of the proposal can be found at:
www.ripe.net/ripe/policies/proposals/2008-04.html

Concluded Proposals

Four proposals were concluded in the period March-August 2008

1. *End Policy for IANA IPv4 Allocations to RIRs, 2007-07*
Proposed by Toshiyuki Hosaka

2. *Global Policy for the Allocation of the Remaining IPv4 Address Space, 2007-06*
Proposed by Roque Gagliano, Francisco Obispo, Hytham EL Nakhal, Didier Allain Kla

These proposals were to distribute a single /8 to each RIR at the point when the IANA free pool is left with five /8s. During RIPE 55, they were discussed together and the community advised the authors to come up with a joint proposal instead of having two similar proposals in the PDP at the same time. The authors followed up on this recommendation, withdrew these proposals and authored a new joint proposal (2008-03) in March 2008. As a result, 2007-07 and 2007-06 are now archived and can be found at:
www.ripe.net/ripe/policies/proposals/2007-07.html
www.ripe.net/ripe/policies/proposals/2007-06.html

3. *Assigning IPv6 PI to Every Inetnum Holder, 2008-01*
Proposed by Lutz Donnerhacke

This proposal suggested that the RIPE NCC should conduct a one-time operation to assign a /56 IPv6 PI prefix to all End Users with an IPv4 assignment registered in the RIPE Database. After the discussions at RIPE 57, the proposer decided to withdraw the proposal due to insufficient support. The details of the proposal are archived and can be found at:
www.ripe.net/ripe/policies/proposals/2008-01.html

4. *Assigning IPv6 PA to Every LIR, 2008-02*
Proposed by Lutz Donnerhacke

This proposal suggested that the RIPE NCC should conduct a one-time operation to allocate an IPv6 block to every LIR that does not have any existing IPv6 holdings. Similar to 2008-01, after the discussions at RIPE 57, the proposer decided to withdraw the proposal due to insufficient support. The details of the proposal are archived and can be found at:
www.ripe.net/ripe/policies/proposals/2008-02.html

Archived proposals (either withdrawn or concluded) are stored at:
www.ripe.net/ripe/policies/proposals/archive

Some Other News About the RIPE Policy Development Process (PDP)

A proposal by the RIRs entitled IANA Policy for Allocation of ASN Blocks to RIRs, 2007-04, was discussed by the RIPE community and concluded with consensus in September 2007. Since then it has been concluded in all RIR regions and was ratified by ICANN in July 2008 as a global policy. Accordingly, the RIPE NCC will receive ASN blocks from IANA following this policy from now on.

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RIPE Policy Development Process: March–August 2008

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As of 1 January 2010, IANA and the RIRs will cease to make any distinction between 16-bit only and 32-bit only ASNs and will operate ASN allocations from an undifferentiated 32-bit ASN allocation pool. The policy document can be found at:
www.ripe.net/ripe/docs/ripe-416.html

As of early Sepember 2008, there were eight proposals **open** in the RIPE PDP:

1. *Provider Independent (PI) IPv6 Assignments for End User Organisations, 2006-01*
Proposed by Jordi Palet Martinez

This proposal is intended to provide a solution for organisations that need IPv6 Provider Independent (PI) assignments.
www.ripe.net/ripe/policies/proposals/2006-01.html

2. *PI Assignment Size, 2006-05*
Proposed by Philip Chr. Laustsen Langelund

This proposal suggests that the minimum assignment size for PI assignments be a /24 when routing is a major issue for a multihoming End User.
www.ripe.net/ripe/policies/proposals/2006-05.html

3. *Direct Internet Resource Assignments to End Users from the RIPE NCC, 2007-01*
Proposed by Nick Hilliard

This proposal states that a contractual relationship between an End User and a sponsoring LIR or the RIPE NCC must be established before the End User receives Internet number resources (Autonomous System (AS) Number, Provider Independent (PI) IPv4 and IPv6, Internet Exchange Point (IXP) and anycasting assignments) directly from the RIPE NCC. The proposal also reaffirms and clarifies the existing RIPE policy that IPv4 PI address assignments of any type cannot be sub-assigned.
www.ripe.net/ripe/policies/proposals/2007-01.html

4. *IPv6 ULA-Central, 2007-05*
Proposed by Jordi Palet Martinez

This proposal is to allow the assignment of IPv6 blocks within the so-called "Centrally Assigned Unique Local IPv6 Unicast Addresses" to organisations or individuals requiring it.
www.ripe.net/ripe/policies/proposals/2007-05.html

5. *Enabling Methods for Reallocation of IPv4 Resources, 2007-08*
Proposed by Nigel Titley and Remco van Mook

This proposal outlines a framework to migrate previously allocated IPv4 resources from one Local Internet Registry (LIR) to another LIR within the RIPE NCC service region.
www.ripe.net/ripe/policies/proposals/2007-08.html

6. *Cooperative Distribution of the End of the IPv4 Free Pool, 2007-09*
Proposed by Tony Hain

This policy will establish a process for RIR-to-RIR redistribution of the tail-end of the IPv4 pool, taking effect after the IANA Reserve is exhausted. Each redistribution allocation will be triggered by the recipient RIR depleting its reserve to a 30-day supply and will result in up to a 3-month supply being transferred from the RIR with the longest remaining time before it exhausts its own pool.
www.ripe.net/ripe/policies/proposals/2007-09.html

7. *Global Policy for the Allocation of the Remaining IPv4 Address Space, 2008-03 (see "Submitted Proposals" above)*

8. *Using the Resource Public Key Infrastructure to Construct Validated IRR Data, 2008-04 (see "Submited Proposals" above)*

Further Information

You can find the full list of current proposals at:
www.ripe.net/ripe/policies/proposals •

IPv6 at the OECD Ministerial Meeting, Seoul, June 2008

A key goal of the Regional Internet Registries (RIRs) at the OECD Ministerial Meeting in Seoul was raising awareness of IPv4 depletion and IPv6 deployment issues. As well as discussing the existing IP address distribution system, of which the RIRs are a central part, the event was an important opportunity to examine the role of governments and other public sector stakeholders in these issues.

Geoff Huston, APNIC Chief Scientist, participated in a panel discussion on the convergence of networks and related services with a range of ministers and CEOs. The objective of this session was to discuss policy and regulatory frameworks and to identify where changes are needed to foster convergence and promote the next generation of networks, understand the implications of convergence

for consumers and highlight the opportunities and challenges for transitioning to the newer version of the Internet protocol, IPv6, and its role in enabling growth of the Internet.

The meeting closed with the ministers releasing a declaration that stated that the adoption of IPv6 would be encouraged, in particular through its timely adoption by governments as well as large private sector users of IPv4 addresses. This was a positive outcome from the perspective of the RIRs, who issued a press release at the start of the OECD meeting that detailed some of the main issues relating to the depletion of IPv4 addresses and the transition to IPv6. Key sections of this important and influential release are quoted below:

> *The RIRs are responsible for managing the allocation, assignment and registration of Internet number resources (IPv4 addresses, IPv6 addresses and Autonomous System (AS) Numbers).*
>
> *With approximately 85% of all available IPv4 Internet addresses already in use by May 2008, experts predict that the remaining stock of unallocated IPv4 addresses will be consumed by around 2011. This may have an impact on new Internet users and users of Internet devices that are not IPv6 enabled. In contrast, the pool of available IPv6 numbers exceeds 340 billion billion billion billion.*
>
> *Internet addresses are allocated on an 'as-needed' basis. Firstly, they are allocated to the RIRs from a central pool and then each RIR distributes them within their region. This system prevents any one country from running out of addresses significantly before its neighbours within the same region, and ensures that the supply to all regions is maintained for as long as possible.*

Geoff Huston, Chief Scientist at APNIC will call for a significant acceleration of investment in the infrastructure vital for effective IPv6 adoption, as part of his speech on Internet industry challenges:

'At present, only a small percentage of the Internet infrastructure is IPv6 compatible. Significant investment in the infrastructure is required to make the transition from IPv4 to IPv6 viable. The cost of migrating the Internet infrastructure to IPv6 is estimated to be anywhere between USD50 billion and USD75 billion depending on the efficiency with which the appropriate infrastructure is readied. The longer investment in this infrastructure is deferred, the greater the risk of Internet growth slowing down and additional costs being incurred.'

Axel Pawlik, Managing Director of the RIPE NCC states: 'IPv6 is vital to the Internet economy. In order to sustain this rapidly growing, global industry, we urge all stakeholders to help accelerate the widespread deployment of IPv6. We've already seen the EU make a positive declaration of intent regarding IPv6 planning and we're confident that IPv6 space will provide a platform for innovation in IP-based services and applications as long as the infrastructure is made ready.'

Tarek Mohamed Kamel, Minister for the Ministry of Communications and Information Technology, Egypt, will be speaking alongside Geoff Huston at the OECD Ministerial Meeting. Kamel comments: 'The current dialogue on IPv6 between global governments, business leaders, technical experts and academics is crucial to ensure that users around the world continue to benefit from the innovation that new infrastructure and new Internet space will bring. Our efforts to ensure the free and open access attributed to the development of the Internet must be continued so that we can fully realise the benefits in the near future.' •

How to Get IPv6 Address Space from the RIPE NCC

As the Regional Internet Registry (RIR) for Europe, the Middle East and parts of Central Asia, the RIPE NCC is responsible for managing the allocation of IPv6 resources in its service region.

To receive a /32 IPv6 allocation, an organisation needs to:

1. Be a member of the RIPE NCC.
2. Submit an IPv6 first allocation request form to hostmaster@ripe.net.
3. Indicate in the request form that they wish to advertise the allocation as a single prefix if they will announce it to the Internet.
4. Document a plan to make sub-allocations to other organisations and/or to make assignments to end sites within two years of receiving the allocation.

As of July 2008 the RIPE NCC had made approximately 1,000 IPv6 allocations, representing just under half the amount of total IPv6 allocations made globally.

More information about requesting IPv6 address space from the RIPE NCC is available at: www.ripe.net/IPv6 •

IPv6 Hours – Sink or Swim!

Over the last 12 months, attendees at various Internet community meetings and events experienced "IPv6 Hour". From NANOG to the APNIC meeting and the most recent RIPE Meeting in Berlin, these events, staged around the world, have brought new attention to the practical side of IPv6 transition. By temporarily shutting down the public IPv4 networks that event attendees are so used to, many Internet professionals have been guided (if not goaded) into taking their first steps toward normalised IPv6.


Randy Bush


Dr Philip Smith

Dr Philip Smith and Randy Bush are two mainstays of the Internet industry. They have been heavily involved in both the conception and execution of IPv6 Hours around the world, playing hands-on roles in facilitating IPv6 Hours at events including NANOG, APRICOT/APNIC, the RIPE Meeting, MENOG and AfNOG.

Smith describes the IPv6 Hours as a way "to demonstrate what the world would be like in the absence of IPv4." More specifically, notes Bush, "The events offer a chance for operators to see it can be done, though there are problems, [and] to have the vendors see that they have problems. To prepare us all for some possible paths."

In terms of achieving these aims, both believe that the program of IPv6 Hours has been a success. "When I started this push a year ago", says Bush, "IPv6 deployment was flat and stalled. It is [still] not fantastic, but the first derivative has definitely increased. Sadly, it takes a good eye to see the change, but for the first time in years there has been one."

"It proved to people that IPv6 is ready, but [at the same time] isn't really ready", says Smith. He explains that although IPv6 is a deployed protocol, there are still a range of issues to be resolved in terms of operating system compatibility and routers. So, for Smith, one benefit of the IPv6 Hours is that they have encouraged people in the operations industry to talk more about IPv6.

Bush also pinpoints a number of issues highlighted by the IPv6 Hours: "Carrier class NAT is an internal solution for a few giant broadband ISPs; it does nothing to help the End Users toward IPv6," he notes. "NAT-PT works, but the spec needs updating and implementations are weak. All end hosts' systems have problems, some larger than others."

Although the events themselves have been extremely positive in the amount of information they have yielded and the discussion they have inspired, both Smith and Bush are decidedly less sunny when it comes to a final analysis of the industry's overall readiness for a transition to IPv6.

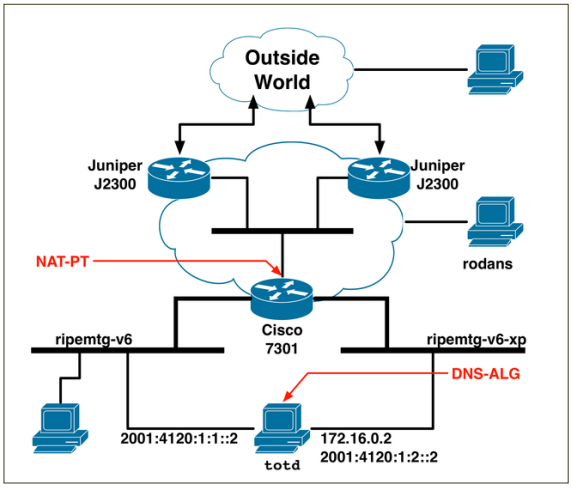
"It's not [ready]," states Smith. "Router vendors need to take a serious look at NAT-PT - and scaling NAT and NAT-PT for that matter. Content providers need to get their services on IPv6."

"The issues of industry readiness," continues Bush, "aside from the continuing lack of real vendor support, are motivation and money, not technology!"

A website has been set up with a range of information on IPv6 Hours, including details of the networking arrangements at specific events and more of the lessons learned: www.civil-tongue.net/6and4/wiki/Lessons%20Learned •

RIPE 56: The Big IPv6 Switch

The RIPE 56 Meeting in Berlin, Germany, included "The Big IPv6 Switch", which saw the IPv4 wireless network disabled for an hour during the special IPv6 Plenary session on Wednesday morning. As with previous IPv6 Hours at other industry events, two additional "IPv6-only" networks were built for the event, one specifically set up with Windows XP users in mind. See the network diagram on the right for details of the network set-up on the day.



Shortly after the IPv4 network was turned off, there were 120 users connected to an IPv6-only network (almost every attendee in the session).

The presentations given during the IPv6 Plenary session, all of which were related to IPv6 adoption or IPv4 depletion, sparked lively debate that carried over to the RIPE IPv6 Working Group session later in the day.

Presentations and a webcast archive from the IPv6 Plenary session and the IPv6 Working Group are available at: www.ripe.net/ripe/meetings/ripe-56/presentations/wednesday.html •

IPv6 Deployment at the RIPE NCC

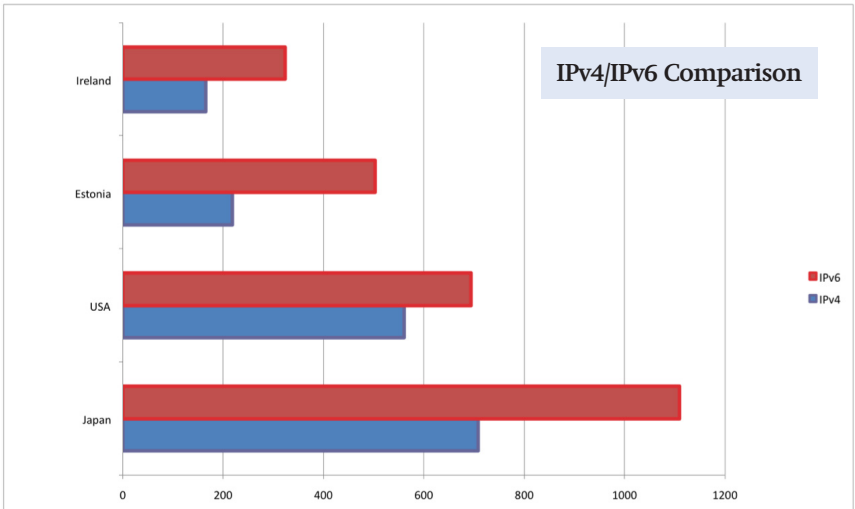
At the RIPE 56 Meeting, RIPE NCC Chief Technical Officer Andrei Robachevsky gave a presentation on the progress being made by the RIPE NCC to provide all its services over both IPv4 and IPv6. The goal is to have reached a point by the end of 2008 where an IPv6-only End User should be able to use all membership and community services offered by the RIPE NCC.

It is also a goal to incorporate IPv6 awareness into the RIPE NCC's Information Services (where applicable); for example, monitoring DNS servers via IPv6.

The chart below shows the situation as of August 2008. The areas where IPv6 has not yet been deployed are currently being investigated by RIPE NCC staff.

External Online Services	IPv6 Transport	IPv6 Content
E-mail (ripe.net, nro.net, aso.icann.org)	Yes	N/A
ftp.ripe.net	Yes	N/A
www.ripe.net	Yes	N/A
LIR Portal	No	N/A
RIPE Database (whois)		Resource database, IRR
Queries (whois)	Yes	Yes
Updates	Yes	Yes
DBConstat	No	No
RRCC	No	No
DNSMON	Yes	Yes
Hostcount	Yes	Yes
RIS	No	Yes
MyASN	No	No
TTM	Yes	Yes
Auth DNS	Yes	Yes
Rev DNS provisioning system	Yes	Yes
K-root	Yes	Yes

This chart shows the current response time of RIPE NCC services over IPv6 from various points around the world. It clearly demonstrates that IPv6 response times remain slower than IPv4 response times, but this is expected to change as IPv6 network capacity increases.



Time in milliseconds to retrieve www.ripe.net over IPv4/IPv6 measured on testboxes in each country

Conference Calendar

Conferences and meetings that may be of interest to RIPE NCC members

23–24 September 2008
RIPE NCC Regional Meeting
Moscow, Russia
www.ripe.net/meetings/regional/moscow-2008

29 September 2008
Roundtable Meeting
Amsterdam, the Netherlands
www.ripe.net/meetings/roundtable/sept2008

15–17 October 2008
ARIN XXII
Los Angeles, USA
www.arin.net/ARIN-XXII

12–15 October 2008
NANOG 44
Los Angeles, USA
www.nanog.org/future.html

26–30 October 2008
RIPE 57
Dubai, United Arab Emirates
www.ripe.net/ripe/meetings/ripe-57

2–7 November 2008
ICANN Meeting
Cairo, Egypt
http://public.icann.org/cai

11–13 November 2008
ISPCON
San Jose, USA
www.ispcon.com

16–21 November 2008
IETF 73
Minneapolis, USA
www.ietf.org/meetings/0mtg-sites.txt

17–18 November 2008
LINX63
London, United Kingdom
www.linx.net

22–28 November 2008
AfriNIC 9
Addis Ababa, Ethiopia
www.afrinic.org/meeting

3–6 December 2008
IGF 2008
Hyderabad, India
www.intgovforum.org

January 2009
SANOG 13
Lahore, Pakistan
www.sanog.org

16–17 November 2009
LINX64
London, United Kingdom
www.linx.net

18–27 February 2009
APNIC 27/APRICOT 2009
Manila, Philippines
www.apnic.net/meetings

1–6 March 2009
ICANN 34
Mexico City, Mexico
www.icann.org/general/calendar

22–27 March 2009
IETF 74
San Francisco, USA
www.ietf.org

RIPE NCC Training Courses

LIR Training Courses

Amsterdam, the Netherlands
Friday, 10 October 2008

Barcelona, Spain
Thursday, 16 October 2008

Bern, Switzerland
Thursday, 23 October 2008

Rome, Italy
Friday, 24 October 2008

Riga, Latvia
Friday, 7 November 2008

London, United Kingdom
Thursday, 13 November 2008

Frankfurt, Germany
Friday, 21 November 2008

Kish Island, Iran
Monday, 24 November 2008

Belgrade, Serbia
Friday, 28 November 2008

Podgorica, Montenegro
Monday, 1 December 2008

Routing Registry Training Courses

Oslo, Norway
Friday, 3 October 2008

London, United Kingdom
Friday, 14 November 2008

Istanbul, Turkey
Friday, 5 December 2008

DNS for LIRs Training Course

Barcelona, Spain
Wednesday, 15 October 2008

Amsterdam, the Netherlands
Friday, 12 December 2008

RIPE NCC Speakers

To request a RIPE NCC speaker for your event, please contact: speaker@ripe.net

A list of topics that the RIPE NCC can provide speakers for is available at:
www.ripe.net/meetings/ncc-speakers.html

RIPE Meetings

RIPE 56

The RIPE 56 Meeting took place at the Hotel Palace, Berlin, Germany from 5–9 May 2008.

The RIPE 56 Meeting Report is available at:
www.ripe.net/ripe/meetings/ripe-56/report.html

Minutes and presentations from the RIPE 56 plenary and working group sessions are available from:
www.ripe.net/ripe/meetings/ripe-56/presentations

RIPE 57

RIPE 57 will take place at the JW Marriott Hotel, Dubai, United Arab Emirates from 26–30 October 2008.

More information is available at:
www.ripe.net/ripe/meetings/ripe-57

RIPE 57 starts on a Sunday and finishes on a Thursday to coincide with the working week in the Middle East region. •

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