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RIPE Network Coordination Centre

Member Update

September 2006

Information bulletin for the members of the RIPE NCC

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.

Daniel Karrenberg Elected as Chair of ISOC's Board of Trustees

The RIPE NCC is pleased to announce that its Chief Scientist, Daniel Karrenberg, has been elected as the new Chair of the Internet Society's (ISOC's) Board of Trustees. Daniel was elected on 1 July 2006 during ISOC's Annual General Meeting (AGM) which was held in Marrakesh, Morocco.

"The Internet Society has much to contribute to the continued success of the Internet," said Daniel. "The diligent work of my predecessors, the Trustees and the staff has put the society in a very sound position. Building on this foundation, we will intensify our work in the areas of public policy and education. We will ensure that the Internet Engineering Task Force (IETF) has the administrative support it needs to continue its exemplary standardisation work. We will continue to build a healthy network of chapters for local activities close to the Internet users. All this will help us to realise our motto 'The Internet is for Everyone'".

Daniel is a pioneer member of ISOC and has been actively involved with the development of many of the society's educational initiatives. He taught tutorials at early INET conferences, supported networking workshops and has written ISOC member briefings about Internet operations and coordination. In 2001, he

Daniel Karrenberg, Chief Scientist, RIPE NCC

was awarded the Jon Postel service award in recognition of two decades of extraordinary dedication to the development of networking in Europe and around the world. A regular IETF participant since 1992, Daniel has co-authored several RFCs.

We hope you will join the RIPE NCC in congratulating Daniel on his election and wishing him continued success with the important contributions he makes to ISOC's work for the Internet community. ●

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

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

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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.

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Geoff Huston, Internet Research Scientist, APNIC

Introduction

The Internet has presented us with some novel challenges in its role as a global communications platform. These challenges include creating applications that support new communication paradigms, as well as tackling an entirely new realm of security considerations. It is this latter area, and in particular the aspect of network infrastructure security, that resource certification can play a critically important role.

One of the common vulnerabilities of the Internet lies in the routing subsystem. If it is possible to inject false routing information into the routing system, then a number of forms of hostile attack are enabled. In this case, there is no need to compromise the proper operation of any particular application, nor is there any need to create a drone army through the assembly of captured end systems.

By being able to manipulate the network's routing state, it is possible to redirect user traffic as well as to perform traffic inspection, alteration or subversion, all without the user even being aware of the attack. Through deliberate subversion of routing, services can be hijacked or blocked and entire networks can be black-holed. Why is the Internet's routing system, the integrity of which appears to be so critical to the proper functioning of all forms of Internet services, such a point of vulnerability?

Routing and "Trust"

The answer lies in the nature of the Internet. A more historical model of network service provision was that of a small number of qualified network service providers and an associated set of network clients. The trust model within such a framework spans across the network service providers and explicitly excludes the client base. Examples of such a framework include the international postal system or the public switched telephone system. The Internet model has a broader model of a network service provider that includes various forms of networks that would normally be considered as clients rather than peer network service providers. This results in a trust domain that is both very broad and very diverse. Indeed so diverse as to make the term "trust" inapplicable.

In such an environment, networks interconnect by means of exchange of routing information relating to address prefixes. So when a client network requests its ISP to accept a routing advertisement for a particular address prefix, how can the service provider establish whether the request is valid and the addresses are, indeed, ones that properly can be associated with the client network? When two ISPs enter into a peering arrangement at a local exchange, how can each ISP tell whether all the route advertisements from the other ISP are valid? The task of establishing the validity of routing requests and routing advertisements is one that has serious repercussions if a mistake occurs, particularly if the ISP admits a malicious route into the routing fabric.

Validating Routing Requests

There are various information resources available today that can assist in validating a routing request, including WHOIS database queries and Internet Routing Registries (IRRs). However, such resources have some issues with the currency, accuracy, completeness and the validity of the information they present. Validating a routing request or a routing advertisement can quickly become an exercise in data mining across a rather diverse set of potentially conflicting information sources. Such a validation task can be complex, expensive to undertake and can lead to outcomes that are not totally trustworthy.

In an industry of low margins and cost constraint, it is not surprising that route validation, particularly in complex cases, is often performed in a haphazard fashion. This leads to a continual series of attack incidents via deliberate subversion of the route admission process and, consequently, deliberate subversion of the routing system.

Can we improve this situation? Is it possible to improve the level of accuracy of validation while at the same time making validation fast, efficient, accurate and cheap?

Resource Certification

One possible approach to this is through the use of public key cryptography, coupled with a public key certificate infrastructure. In such a framework, IP resource holders (of IP addresses and AS Numbers) hold a private key that is associated with their resource holdings. The corresponding public key is certified by the resource issuer, where the public certificate lists both the matching

public key and the resource holdings. This certificate is signed by the issuer's private key. Any document signed with the resource holder's private key can be readily validated against the issued certificate, and if the document contains a reference to an IP resource, this resource can be compared to that listed in the certificate. In effect, this certificate represents a form of "right-of-use" of an IP resource, granted by the resource issuer. For example, if an entity has been assigned the IP address block 192.0.2.0/24 and wishes an ISP to route that address prefix on its behalf, it would sign a route request with its private signature and attach the associated resource certificate. The recipient of the route request could validate the signature against the certificate, and check that the address block in the certificate encompasses the address block 192.0.2.0/24.

Why is the Internet's routing system, the integrity of which appears to be so critical to the proper functioning of all forms of Internet services, such a point of vulnerability?

This certificate is then validated in the context of a Resource Certificate Public Key Infrastructure (PKI). If the certificate is valid, then there is a high degree of confidence that the routing request is legitimate, that it came from the current holder of the resource and that the resource itself is validly assigned to that entity for its use.

To validate these resource certificates a Resource Certificate PKI is proposed. In this case, a hierarchical PKI model is appropriate rather than a "web of trust" model. In a hierarchical PKI model, validation of a certificate entails not only validation of the certificate's contents, but also validation of the issuer's signature in the certificate. This, in turn, requires validation of the parent certificate that certifies the issuer's public key, and so on. This validation path terminates when a "trust anchor" certificate is encountered.

The approach proposed in this resource certificate model is for the Regional Internet Registries (RIRs) to issue self-signed root certificates that are able to undertake the role of trust anchors for IP resources. In this framework, a certificate is valid if there exists a sequence of valid certificates from an RIR trust anchor to the certificate being validated. The certificate validation path follows the existing resource allocation path, so that when an RIR performs a resource allocation, it also issues an associated certificate to the resource recipient with the allocated resources listed in the certificate. If the recipient is functioning as a redistribution point, such as a Local Internet Registry (LIR), then it too issues certificates corresponding to the resource sub-allocations that it performs, and so on. Validation of a resource certificate is, within the terms of this framework, directly analogous to unravelling and validating a sequence of WHOIS resource allocation records from the RIR to the target entity. However, in this case the path is deterministic and the information model being used is consistent along the entire certificate path. How can such resource certificates be used to improve the situation with respect to routing security?

Improving Routing Security

This resource certificate framework can also be used as the supporting infrastructure for security-related refinements in inter-domain routing protocols. One approach, sBGP, proposes adding digital signatures to BGP update messages, allowing a BGP peer to validate the authenticity of the address prefix being advertised. This also allows a BGP peer to validate that the update message itself has traversed the same network path as that asserted in the AS PATH attribute of the update message.

Another approach, soBGP, proposes the use of digital signatures to flood inter-AS topology information across the network. When coupled with the signed origination of address prefixes, this would allow the receiver of the update to validate the address prefix and determine if the AS PATH attribute is a plausible one in terms of network topology.

Conclusion

While it is likely that it will take some time to achieve complete deployment of a secure inter-domain routing infrastructure, there is considerable value in being able to simply improve the trust model in the current environment of using routing requests, IRRs and WHOIS databases. Within such a framework, digital objects, such as routing requests, IRR objects or WHOIS entries could be signed by the resource holder. This would allow third parties to validate the information, validate the implied currency of "right-of-use" of the resource and validate the resource itself in an automated fashion.

By enabling this degree of automation, the exercise of confirming the accuracy and validity of routing information and routing requests

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would become one that could be performed with a high degree of accuracy, efficiency and speed. There are a number of current activities associated with resource certificates and the effort to improve the security properties of the Internet's inter-domain routing system.

APNIC, in cooperation with the other RIRs, has embarked on a trial of resource certification. This effort includes an open source toolkit and associated documentation as well as an exercise in prototyping the integration of certificate management into the resource management framework. Within the Internet Engineering Task Force (IETF) the Secure Inter-Domain Routing Working Group (SIDR) has been chartered to develop standards relating to securing inter-domain routing protocols. ●

Geoff Huston's presentation at RIPE 52 on the Resource Certification trial can be found at: *http://www.ripe.net/ripe/meetings/ripe-52/presentations/ripe52-plenary-apniccertification.pdf*

RIPE Policy Development in 2006

Policy Announce Mailing List

If you are interested in what is being discussed but do not want to follow all the discussions, you can subscribe to the *policy-announce@ripe.net* mailing list. This is an announcement-only list and updates are only sent to it when the status of a proposal has changed. You can subscribe to this list at: *http://www.ripe.net/mailman/listinfo/policy-announce*

Submitted Proposals

Three RIPE policy proposals have been submitted since the beginning of 2006. Two of these proposals were about IPv6 address space distribution, while the other proposed a new status in inet6num objects in the RIPE Database.

Provider Independent (PI) IPv6 Assignments for End User Organisations, 2006-01: Proposed by Jordi Palet Martinez. The proposal is intended to provide a solution for organisations that need IPv6 Provider Independent (PI) assignments. The proposal was revised by the author after the RIPE 52 meeting, taking into account the feedback received from the community at RIPE 52 and on the Address Policy mailing list. The latest version of the proposal can be found at: *http://ripe.net/ripe/policies/proposals/2006-01.html*

IPv6 Address Allocation and Assignment Policy, 2006-02: Proposed by Jordi Palet Martinez. This proposal is to change the IPv6 Initial Allocation Criteria, the End Site definition and assignment of multiple /48s to a single End Site. You can find the details of the proposal at: *http://ripe.net/ripe/policies/proposals/2006-02.html*

LIR-PARTITIONED Status for IPv6, 2006-03: Proposed by João Cabral. He proposed a new status for IPv6 address space as "LIR-PARTITIONED". He argued that there is a need for a means to partition the allocation within a Local Internet Registry (LIR) and delegate authority over database assignments for IPv6 allocations. This way, different groups within the LIR can manage different parts of an IPv6 allocation. The proposal was made on the Database Working Group mailing list in June 2006 and was withdrawn by João in July 2006.

Withdrawn Proposals

Some proposals from 2005 were withdrawn in 2006:

- **IPv6 Address Allocation and Assignment Policy Definition for "End-Site", 2005-04:** Author Eric Schmidt decided that the proposal was no longer necessary. It was withdrawn in January 2006.

- **HD-ratio proposal (for IPv4 Additional Allocations), 2005-01:** The proposal was withdrawn in May 2006 by the proposer, Alain Bidron, who felt that, as there had been a number of objections, consensus had not been reached.

- **IPv6 Initial Allocation, 2005-03:** The proposal was withdrawn in June 2006 by the proposer who thought it was superceded by **IPv6 Address Allocation and Assignment Policy, 2006-02** (see above).

Concluded Proposals

The Internet Assigned Numbers Authority (IANA) Policy for Allocation of IPv6 Blocks to Regional Internet Registries, 2005-09: This proposal concluded the PDP lifecycle. The RIPE community reached consensus and the proposal resulted in a RIPE policy document, ripe-376, in April 2006. The document outlines the allocation of IPv6 address space from the IANA to the RIRs as proposed by all five RIRs and accepted by the RIPE community. This policy will be a "global" policy. You can find this proposal at: *http://www.ripe.net/ripe/policies/proposals/2005-09.html*

RIPE Document ripe-376 can be found at: *http://ripe.net/ripe/docs/ripe-376.html*

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

Further Information

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

Find out more about the RIPE Policy Development Process (PDP) at:
http://www.ripe.net/ripe/docs/pdp.html ●

Learn more about the RIPE PDP by taking the RIPE NCC's E-Learning Centre's online course:
https://e-learning.ripe.net/

Who Can Make or Change Policies?

Need to attend RIPE meetings?	NO
Need to pay a fee to submit a policy proposal?	NO
Need to be a paid up member of the RIPE NCC?	NO
Need to have access to an e-mail account?	YES

How to Make a Policy Proposal

A proposal is usually submitted through the Chair of the relevant RIPE Working Group or the RIPE Chair. You can find the proposal template at:
http://www.ripe.net/ripe/policies/proposals/template

Filiz Yilmaz, Policy Development Officer, RIPE NCC

RIPE NCC Policy Development Officer

The RIPE NCC is pleased to announce that it has appointed a Policy Development Officer (PDO). Filiz Yilmaz, an IP Resource Coordinator for the RIPE NCC, has taken on the responsibilities of this new role. The PDO will facilitate, coordinate and support the RIPE Policy Development Process (PDP) as well as coordinate the RIPE NCC's support for the PDP. Filiz will also carry out the following duties:

- Track policy development and communicate the process internally at the RIPE NCC and externally to the RIPE community.
- Assist policy development within the RIPE community by drafting and documenting policies.
- Support the RIPE NCC in the implementation of new IP resource and registration policies.
- Support the RIPE NCC in its analysis of policy changes and compile and report the outcomes to the RIPE community.

You can contact Filiz about any RIPE PDP issues at: *filiz@ripe.net*

More information about the RIPE PDP can be found at:
http://www.ripe.net/ripe/policies/index.html ●

RIPE Meetings

RIPE 52

The RIPE 52 Meeting took place from 24 - 28 April 2006 at the Ceylan InterContinental Hotel in Istanbul, Turkey.

The RIPE 52 Meeting Report, including a summary of the action points and highlights from all RIPE Working Group sessions, is available at:
http://www.ripe.net/ripe/meetings/ripe-52/report.html

Minutes from all sessions are available at:
http://www.ripe.net/ripe/meetings/ripe-52/minutes/index.html

All the Plenary and RIPE Working Group session presentations can be viewed at:
http://www.ripe.net/ripe/meetings/ripe-52/presentations/index.html ●

RIPE 53

The RIPE 53 Meeting will take place from 2 – 6 October at the Krasnapolsky Hotel in Amsterdam, the Netherlands.

More information about RIPE 53 is available at:
http://www.ripe.net/ripe/meetings/ripe-53/index.html

RIPE NCC General Meetings

The RIPE NCC Executive Board (front from left): *Jim Reid, Kees Neggers, Dmitry Burkov.* ***(Back from left):*** *Nigel Titley, János Zsakó.*

RIPE NCC General Meeting April 2006

The RIPE NCC General Meeting (GM) 2006 was held on Wednesday, 26 April, adjacent to the RIPE 52 Meeting at the Ceylan InterContinental Hotel in Istanbul, Turkey. Dmitry Burkov was voted into the Executive Board seat vacated by Frode Greisen. The RIPE NCC members at the GM unanimously approved the 2005 Financial Report of the RIPE NCC.

More information about the 2006 GM can be found at:
http://www.ripe.net/membership/gm/gm-april2006/

Upcoming RIPE NCC General Meeting, October 2006

The next RIPE NCC General Meeting will be held on Thursday, 5 October 2006, adjacent to the RIPE 53 Meeting at the Krasnapolsky Hotel in Amsterdam, the Netherlands. All members of the RIPE NCC are welcome to attend but must register prior to the meeting.

More information about RIPE NCC General Meetings is available at:
http://www.ripe.net/membership/gm/ ●

RIPE NCC Regional Meetings

Moscow: September 2006

The next Regional Meeting will take place from 18 – 19 September 2006 in Moscow, Russia.

For more information or to register, please see:
http://www.ripe.net/meetings/regional/moscow-2006/

Bahrain: November 2006

A Regional Meeting will also be held in Bahrain on 14 – 15 November 2006.

For more information, please see:
http://www.ripe.net/meetings/regional/

The RIPE NCC Regional Meetings are held in order to obtain direct feedback from members in different regions. Presentations on region specific issues play a central role in the meeting agenda. In addition, the RIPE NCC presents overviews on how to participate in the RIPE Policy Development Process and how to provide input on the RIPE NCC's activities.

The RIPE NCC Regional Meetings also create the opportunity for members in the region to meet each other. Ample time is built into the agenda for socialising and networking. In addition, various RIPE NCC training seminars on topics such as IP Requests, Routing Registry and DNS for LIRs are held in conjunction with these meetings.

More information about upcoming RIPE NCC Regional Meetings is available at:
http://www.ripe.net/meetings/regional/index.html

If you would like to make a presentation at either of the upcoming regional meetings, please contact: *contact@ripe.net.* ●

New ARIN Outreach Tools

At its April 2006 meeting in Montreal, ARIN unveiled one new outreach project and introduced a second project that is underway. These efforts are a new approach to reach those inside the ARIN region as well as the broader community who need to understand ARIN and the RIR system.

On display during ARIN XVII were three ARIN exhibit "booths". The largest one, 8' x 8', was set up in the Cyber Café. Its eye-catching graphics draw in the observer, asking "Who is ARIN?" and answering it with "You Are!". Interchangeable panels provide basic information on ARIN and how one can participate in its activities. Two table-top models with similar information allow greater flexibility in small venues. Literature racks and laptop presentations fit easily within the display area, providing a visually appealing and information-loaded attraction. ARIN will take these new exhibits on the road and set up an "ARIN corner" when attending and participating in related industry conferences and meetings.

The second project is the upcoming first edition of a comic book featuring "Team ARIN" superheroes. In real life scenarios, the Team finds ways to spread the truth about Access, Responsibility, Information, and Neutrality in Internet number resource management. The comic book format should be a nice change from the stacks of paper typically distributed at meetings.

ARIN continues to look for creative and effective ways to educate and engage its community to ensure it is fulfilling its role as stewards of Internet number resources. ●

APNIC Update

APNIC and NIDA sign MoU

On 23 March 2006, APNIC signed a Memorandum of Understanding with the National Internet Development Agency of Korea (NIDA – *http://www.nida.or.kr*). The agreement seeks to foster cooperation in areas such as infrastructure, development, exchange of information and materials, and joint activities including seminars, conferences and training programs. To read about similar partnerships APNIC has established with other industry bodies throughout the Asia Pacific, please see: *www.apnic.net/community/partnership.html*

APNIC Staffer to Chair Secure Routing Working Group

The IETF announced in April 2006 that it had formed a new working group in the Routing Area. The Secure Inter-Domain Working Group (SIDR) is now active and is chaired by APNIC Internet Research Scientist Geoff Huston (Co-Chair is Sandy Murphy). SIDR's scope is limited to inter-domain and router-to-router protocols for unicast and multicast systems. SIDR is charged with formulating an extensible architecture for an inter-domain routing security framework that is capable of supporting incremental additions and functional components. Working with the Routing Protocol Security Group, SIDR will develop security mechanisms that fulfil these requirements and take into account practical deployment considerations.

SIDR mailing list address: *sidr@ietf.org*
SIDR mailing list archive: *www.ietf.org/mail-archive/web/sidr*

APNIC Webcast Makes Training More Accessible for International Internet Community

On 29 May 2006, the APNIC training department conducted its first free live public webcast. On the day of the event 145 unique users from Australia, Pakistan, the Philippines, India, Hong Kong, and 15 other economies logged on to view the training. The training course presented was Internet Resource Management Essentials (IRM E), which is aimed at Internet professionals such as IP managers, senior hostmasters and

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network engineers. The archived webcast can be viewed in Quicktime at:
http://streaming.apnic.net/multimedia/irme-part1-20060529.mov
http://streaming.apnic.net/multimedia/irme-part2-20060529.mov
http://streaming.apnic.net/multimedia/irme-part3-20060529.mov
http://streaming.apnic.net/multimedia/irme-part4-20060529.mov

The training department is currently investigating further possibilities for webcasting APNIC training events. The APNIC eLearning project will be launched at APNIC 22 in Kaohsiung, Taiwan. For more information please see:
www.apnic.net/training ●

Updated RIPE Database User Manual

The RIPE NCC is pleased to announce the publication of an updated version of the "RIPE Database User Manual: Getting Started".

This user manual is a hands-on tutorial that walks the reader through the basic concepts and techniques needed to use the RIPE Database. Using examples and exercises, the user manual provides answers to the following questions:

- What is the RIPE Database?
- How do I get information from the RIPE Database?
- How do I maintain information in the RIPE Database?

The content of the user manual has been revised and updated and we have improved the wording to make it clearer. We have also added extra information about 'webupdates', a tool enabling users to update the RIPE Database by adding, editing or deleting objects.

The RIPE Network Management Database, most often called the 'RIPE Database', is a public database that contains information about registered IP address space and AS Numbers, routing policies and reverse DNS delegations in the RIPE NCC service region. It is used for Internet network management. More information can be found at:
http://www.ripe.net/db/index.html ●

RIPE IP Anti-Spoofing Task Force Formed

At RIPE 52, the "IP Anti-Spoofing" Task Force was established. IP source address spoofing is the practice of originating IP datagrams with source addresses other than those assigned to the host of origin. In simple words, the host pretends to be some other host. The purpose of the IP Anti-Spoofing Task Force is to address this issue by:

- Promoting the deployment of ingress filtering at the network edge
- Informing the Internet community about operational methods of implementing ingress filtering.
- Collecting and channelling requirements to equipment vendors where appropriate

The task force is co-chaired by Nina Hjorth Bargisen and Daniel Karrenberg. The task force webpage, which includes information about the IP Anti-Spoofing mailing list and a link to the task force charter, is available at:
http://www.ripe.net/ripe/tf/anti-spoofing/ ●

IP Resource Request Forms and Supporting Notes

The RIPE NCC has recently completed a project to improve the wording of all resource request forms and supporting notes. The purpose of this project is to make it easier for members to understand and complete these forms.

Resource request forms are available as plain text templates in the RIPE Document Store at: *http://www.ripe.net/ripe/docs/internet-registries.html*

Webforms are available on the LIR Portal at: *https://lirportal.ripe.net* ●

NRO Activities Related to Internet Governance

The NRO participated in the events surrounding the World Summit on the Information Society (WSIS), which consisted of two phases.

The World Summit on the Information Society (WSIS) was held in two phases. The first phase of WSIS took place in Geneva from 10 - 12 December 2003, where 175 countries adopted a Declaration of Principles and Plan of Action. Internet governance emerged as one of the leading discussion issues.The second phase of WSIS took place in Tunis from 16 - 18 November 2005, where participants published the Tunis Commitment and Tunis Agenda for the Information Society.

WSIS participants decided that ICANN would continue its day-to-day management activities and the UN Secretary-General would convene the Internet Governance Forum (IGF) to discuss other issues.

The NRO is actively participating in events leading to the Internet Governance Forum (IGF), the new forum for multi-stakeholder policy dialogue called for in the Tunis Agenda for the Information Society.

The first IGF meeting will take place in Athens in October 2006. For further information, see page 10 and:
http://www.igfgreece2006.gr/ ●

NRO Represented in Internet Governance Forum Advisory Group

United Nations Secretary-General Kofi Annan has named Raúl Echeberría, Executive Director of LACNIC and Adiel Akplogan, CEO of AfriNIC, to serve on a 46-member Advisory Group.

This Advisory Group will assist the Secretary General in convening the Internet Governance Forum and is comprised of representatives from governments, the private sector and civil society. The Group will prepare the agenda and programme for the first meeting of the Internet Governance Forum, which will be held in Athens from 30 October - 2 November 2006. A complete list of Advisory Group members is available on the UN website at:
http://www.un.org/News/Press/docs//2006/sga1006.doc.htm

The selection of two members of the Number Resource Organization (NRO) Executive Council signifies the important contribution that the NRO plays in the Internet community and also reflects the integral role of the Regional Internet Registry (RIR) system in Internet operations. Past NRO activities in Internet governance are detailed on the NRO´s website at:
http://www.nro.net/governance/index.html ●

Roland Perry, Public Affairs Officer, RIPE NCC

The Internet Governance Forum, Athens 2006

By Roland Perry, Public Affairs Officer, RIPE NCC

At the end of October 2006, the first Internet Governance Forum (IGF) will take place in Athens. It will be a smaller event than some people were perhaps expecting, but a great deal of work is taking place to ensure that it is a success and reflects the aims of the World Summit on Information Society's (WSIS) Tunis Agenda.

Much of that success will be judged by whether the IGF fully embraces the many different stakeholders, and whether it is attended by the developing countries that it is seeking to assist. It is hoped that any financial barriers to this attendance will be avoided. Any future IGF meetings will be based on the experience of the Athens meeting, although future meetings could look very different.

After consultation meetings in Geneva in the spring, an Advisory Group was set up to give recommendations on the agenda and on the structure and format of the first meeting. The Advisory Group consists of about forty members representing governments, the private sector and civil society. About a quarter of this group is made up of well-known figures from the Internet community.

Following the opening ceremony on the first day of the IGF, there will be a general session in the afternoon. This session will be based around multi-stakeholder policy dialogue and the purpose is to set the scene for the common themes that will run through the discussions over the remaining three days of the meeting.

The second and third days will have sessions on the key themes of Openness, Security (including cybercrime), Diversity (including multilingualism) and Access. It is expected that these main sessions will take the form of panel discussions led by a chairperson. Audience interaction will be less formal than at a UN meeting without becoming a "free for all". The final day of the meeting will summarise and review the work of the previous days.

The UN has created a secretariat to assist in the organisation of the main sessions, which will be held in all six UN languages (Arabic, Chinese, English, French, Russian and Spanish). All papers submitted within the deadline will be summarised and translated into all six languages.

A series of smaller, independently organised workshops are also scheduled to take place alongside the main sessions. These workshops are intended to demonstrate multi-stakeholder collaboration and geographical diversity and are expected to cover the four main themes. A number of slots will be made available to deal with important topics that do not fit easily within the main themes of the conference but are important to many of the stakeholders.

Registration for WSIS accredited entities and other Internet Governance experts is open at: *http://intgovforum.org/register/*

More information on the IGF Athens 2006 meeting can be found at: *http://www.igfgreece2006.gr/* ●

Improvements to RIPE NCC DNS Services

The RIPE NCC provides DNS related services for its members and the RIPE community.The RIPE NCC continuously reviews these services and examines ways in which they could be improved. Currently, a key focus is the development of automated DNS quality checks, including the introduction of checks for e164.arpa delegations.

These improvements are initiated and implemented based on the feedback of the RIPE NCC members and the RIPE community.

Currently, the RIPE NCC is focused on the following improvements to its DNS services:

• Improving DNS Quality Checks (including glue support for ENUM)

The DNS Checker has been updated so that it can perform automated DNS quality checks in e164.arpa. The RIPE NCC has updated the RIPE Database so that checks applied to reverse DNS delegations can also be applied to e164.arpa.

The RIPE NCC offers full support, including DNS checks, for glue records in e164.arpa delegations. As this required a change to the DOMAIN class in the RIPE Database, a proposal was sent to the RIPE Database Working Group and agreed.

• Ongoing Post-Delegation DNS Quality Checks

The RIPE NCC will implement a system that makes a range of post-delegation DNS checks. This system will monitor the delegations under e164.arpa as well as in the reverse DNS zones. The first phase of this system will make DNS checks when any modification to the existing delegation is made.

In the second phase, the RIPE NCC plans to introduce regular monitoring of the delegations under e164.arpa as well as in the reverse DNS zones.

• Improving Documentation for ENUM Services

The RIPE NCC is focused on providing clearer explanations and documentation for Tier 1 administrators. These improvements will result in a clearer description of the relevant processes and procedures, including step-by-step how-to descriptions and guidelines.

Further Information

The following presentations, delivered at RIPE 52, provide more information about the RIPE NCC's current work on improving the DNS related services that it provides:

Lameness in the Reverse Tree:
http://www.ripe.net/ripe/meetings/ripe-52/presentations/ripe52-dns-lame_dns.pdf

e164.arpa DNS Quality Checks:
http://www.ripe.net/ripe/meetings/ripe-52/presentations/ripe52-dns-enum-quality.pdf ●

RIPE NCC E-Learning Centre

The RIPE NCC E-Learning Centre

Following its launch in November 2005, the RIPE NCC E-Learning Centre has been well received by the Internet community. Over 1,000 accounts have been registered by users from throughout the RIPE NCC service region and beyond.

The E-Learning Centre is a free online resource that allows users to access online courses on a variety of topics. With it, the RIPE NCC can reach a wider audience, enabling more people than ever to participate in RIPE NCC training activities. The online courses are particularly useful for those who are unable to attend the training courses we offer due to geographical, financial or scheduling constraints.

In September 2006, an online module describing the Policy Development Process (PDP) was launched.

Work has begun on developing a module that covers RIPE NCC DNS Services for LIRs and on creating a module on advanced RIPE Database objects. We hope to launch these later in 2006, followed by other modules including:

- IP Address Management
- The Routing Registry and IRRToolset
- IPv6 Services for LIRs
- RIPE NCC Billing and Charging Scheme

More information about the RIPE NCC E-Learning Centre is available at:
https://e-learning.ripe.net/ ●

Conference Calendar

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

4 – 8 September 2006
APNIC 22
Kaohsiung, Taiwan
http://www.apnic.net/meetings/22/index.html

11 – 15 September 2006
SIGCOMM 2006, Pisa, Italy
http://www.sigcomm.org/sigcomm.html

14 September 2006
NLUUG 2006
Ede, the Netherlands
http:// www.nluug.nl/events/nj06/

18 – 19 September 2006
RIPE NCC Regional Meeting
Moscow, Russia
http://www.ripe.net/meetings/regional/moscow-2006/

18 – 21 September 2006
O'Reilly European Open Source Convention
Brussels, Belgium
http://conferences.oreillynet.com/euos2006/

2 – 6 October 2006
RIPE 53
Amsterdam, the Netherlands
http://www.ripe.net/ripe/meetings/ripe-53/

8 – 10 October 2006
NANOG 38
St. Louis Missouri, USA
http://www.nanog.org/future.html

11 – 13 October 2006
ARIN XVIII
St. Louis Missouri, USA
http://www.arin.net/ARIN-XVIII/index.html

10 – 11 October 2006
CENTR GA-31
Toronto, Canada
https://www.centr.org/meetings/ga-31

25 – 27 October 2006
Internet Measurement Conference 2006
Rio de Janiero, Brazil
http://www.imconf.net/imc-2006/

30 October – 2 November 2006
Internet Governance Forum
Athens, Greece
http://www.intgovforum.org/

5 – 10 November 2006
IETF 67
San Diego, USA
http://www.ietf.org/meetings/67-IETF.html

6 - 24 November 2006
The ITU Plenipotentiary Conference
Antalya, Turkey
http://www.itu.int/plenipotentiary/2006/index.html

9 – 10 November 2006
Global Forum 2006
Paris, France
http://www.items.fr/globalforum.php3?id_rubrique=75

14 – 15 November 2006
RIPE NCC Regional Meeting
Manama, Bahrain
http://www.ripe.net/meetings/regional/

27 November – 1 December 2006
AfriNIC-5
Mauritius
http://www.afrinic.net/meeting/index.htm

2 – 8 December 2006
ICANN Meeting
Sao Paulo, Brazil
http://www.icann.org/meetings/

21 February – 3 March 2007
APRICOT 2007
Bali, Indonesia
http://www.apricot2007.net/

27 February – 2 March 2007
APNIC 23
Bali, Indonesia
http://www.apnic.net/meetings/upcoming/index.html

18 – 23 March 2007
68th IETF
TBD/Europe
http://www.ietf.org/meetings/0mtg-sites.txt

26 – 30 March 2007
ICANN
TBD/Europe
http://www.icann.org/meetings/

RIPE NCC Training Courses

LIR Training Courses

Manchester, United Kingdom
Thursday, 7 September 2006

St. Petersburg,
Russian Federation
Friday, 15 September 2006

Vienna, Austria
Friday, 22 September 2006

Amsterdam, Netherlands
Thursday, 28 September 2006

Verona, Italy
Friday, 24 November 2006

Nuremberg, Germany
Friday, 23 February 2007

DNS for LIRs Training Courses

Manchester, United Kingdom
Friday, 8 September 2006

Amsterdam, Netherlands
Friday, 29 September 2006

Rome, Italy
Tuesday, 28 November 2006

Routing Registry Training Courses

Rome, Italy
Monday, 27 November 2006

RIPE NCC Speakers

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

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