2011

RIPE NCC

ANNUAL REPORT 2011

RIPE NCC

NETWORK COORDINATION CENTRE

RIPE NCC

Annual Report 2011

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Table of Contents

REPORT FROM THE CHAIRMAN OF THE EXECUTIVE BOARD

Nigel Titley

With the free pool of unallocated address space coming to an end and continued economic difficulties in the RIPE NCC's service region, it is encouraging that the RIPE NCC membership grew 9% in 2011, the same rate of growth as in 2010.

The Executive Board worked hard with the RIPE NCC in 2011 to ensure the stability of the RIPE NCC. The RIPE NCC is, like its membership, subject to the effects of economic difficulties. As a result, the Executive Board and Senior Management implemented a Treasury Statute in 2011 to diversify investments and minimise the RIPE NCC's risk.

At the RIPE NCC General Meeting in May 2011, Fahad AlShirawi was re-elected to the Executive Board and Christian Kaufmann was elected to the seat vacated by Andreas Wittkemper. Electronic voting allowed members to participate in the election remotely, and this contributed to the highest number of votes cast in a RIPE NCC Executive Board election. It is very encouraging to see increased membership involvement with the processes of the RIPE NCC. To encourage this further, the Executive Board extended electronic voting for the resolutions to be cast at the November 2011 General Meeting.

Between the two General Meetings, the Executive Board received an unprecedented level of feedback from members, both privately and on the membership mailing list, regarding the RIPE NCC's activities, budget and charging methods. This feedback gave the Executive Board a great deal to consider and was most helpful in letting us know what the membership expects from the RIPE NCC and its Executive Board. A common request was to have a closer alignment between the RIPE NCC Activity Plan and the RIPE NCC Budget. This is something the Executive Board will work on with Senior Management.

At the November General Meeting, the membership approved changes to the Articles of Association. These changes strengthened the framework the RIPE NCC operates under and further extended the period in which members could register to vote electronically during General Meetings. Members also voted to have the RIPE NCC continue its work on Internet Number Resource Certification (RPKI). This was a close vote, and the Executive Board will endeavour to ensure that the concerns raised by RIPE NCC members regarding certification are addressed as development continues.

The proposed 2012 Charging Scheme was rejected by the membership at the General Meeting, so the 2011 Charging Scheme will continue to be in force for 2012. The Executive Board will work closely with representatives of the membership, as well as RIPE NCC staff, to develop the principles that the Charging Scheme should be based on and that are acceptable to the membership.

Finally, I would like to thank you for giving us your views throughout the year on a wide range of issues that affect the running of the RIPE NCC. As the free pool of unallocated IPv4 addresses comes to an end, the RIPE NCC Executive Board relies more than ever on receiving direction from the membership. I look forward to the coming years, with the Executive Board and membership working together to maintain a strong registry that benefits us all.

REPORT FROM THE RIPE NCC MANAGING DIRECTOR

Axel Pawlik

February 2011 saw a landmark for the RIPE NCC when we received our last /8 allocation from the IANA. By the end of the year, the RIPE NCC was still allocating from its free pool of IPv4 addresses. However, we carried out significant work in 2011 aimed at ensuring operational and financial stability for the RIPE NCC once the free pool is exhausted. We carefully monitor the free pool of IPv4 addresses and publish the statistics so everyone can be fully informed of the current status. We also look closely at the RIPE community's policies regarding IPv4 to ensure that we accurately and fairly carry out the community's wishes regarding the remaining IPv4 address space.

Much of the RIPE NCC's time and resources went into educating the RIPE NCC members and the Internet community, as well as those not traditionally involved in the technical community, about the run-out of IPv4 and the need to transition to IPv6. We can see in the greatly increased number of IPv6 allocations made in 2011, an almost 50% increase on the year before, that these efforts are being rewarded.

With the run-out of IPv4 and greater demand for IPv6, the RIPE NCC worked hard to successfully maintain service levels. A lot of resources were also invested in maintaining the RIPE NCC as a trusted source of data. To this end, work continued on the Registration Data Quality project and on performing audits of registration data.

We were also pleased that the RIPE NCC membership voted in November 2011 to approve the continuation of the work on Internet Number Resource Certification (RPKI). This is something that will allow the RIPE NCC to maintain a high level of data accuracy in the registry. Work will progress in cooperation with the membership and the technical community. The resource certification service was launched over a year ago, and the level of interest and the increase in take-up from members wishing to certify their resources has been very encouraging.

The RIPE NCC conducted its most extensive survey to date, the RIPE NCC Membership and Stakeholder Survey 2011, soliciting input from non-RIPE NCC members for the first time and reaching the highest number of respondents for any of its large-scale surveys. The feedback received in this survey has provided an enormous amount of valuable input for the RIPE NCC and Executive Board, particularly regarding the services that the RIPE NCC provides and the direction we should take in the years to come.

The RIPE NCC also developed its Information Services offering in 2011, with much of this development being showcased on the now firmly established RIPE Labs platform. Prototype services that were launched on RIPE Labs, such as IPv6 RIPEness, became full services in 2011, and we expect others to follow. The RIPE Atlas active measurements service expanded greatly in 2011, reaching its target of over 1,000 active measurement probes by the end of the year. The addition of user-defined measurements to the RIPE Atlas network should see this become an ever more useful service.

The RIPE NCC continued to step up its outreach efforts on behalf of its members in 2011, sending representatives to several meetings organised by the Organisation for Economic Cooperation and Development (OECD). The RIPE NCC also attended the sixth Internet Governance Forum (IGF) in Nairobi, Kenya. Such involvement with governments and regulators allows the RIPE NCC to represent the interests of RIPE NCC members in high-level discussions about the future of the Internet.

The RIPE NCC also held a productive Roundtable Meeting for Governments and Regulators that saw discussions on IPv6, Internet Number Resource Certification and a range of Internet governance issues.

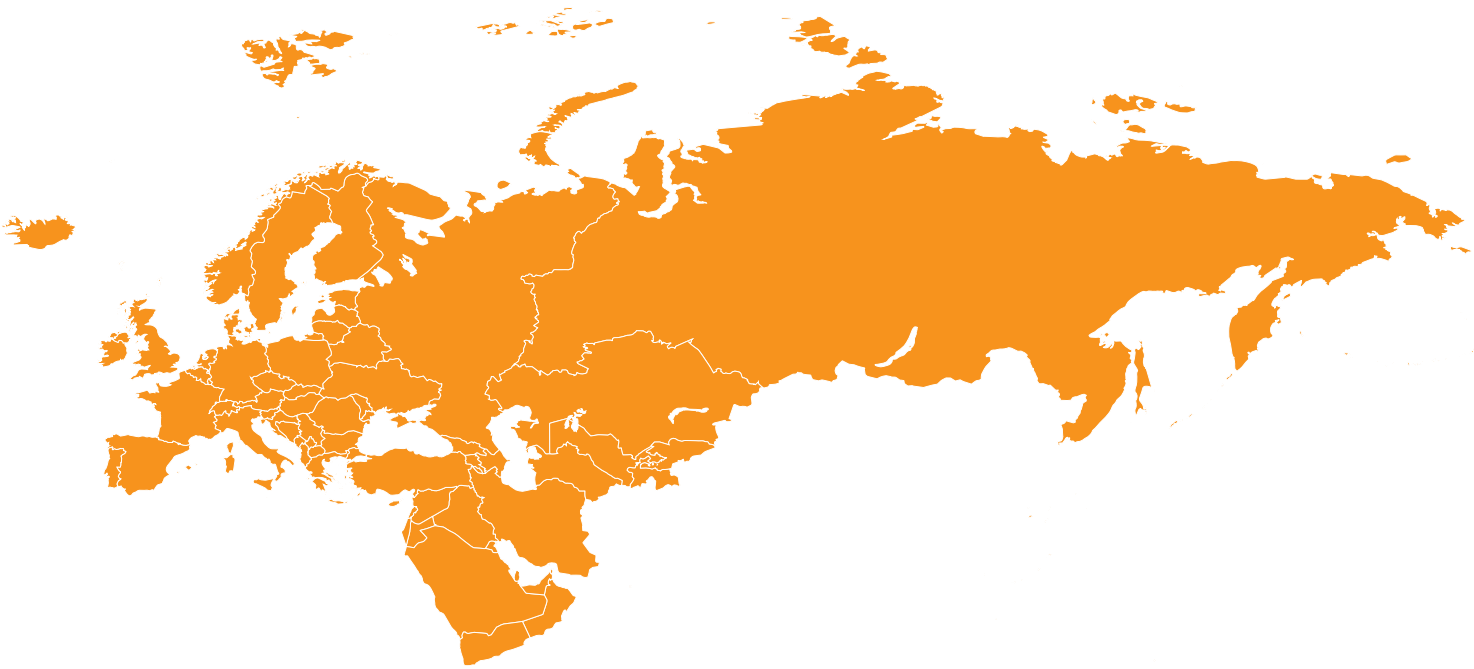
The RIPE NCC held five Regional Meetings in 2011. Two of these were held in association with the Middle East Network Operators Group (MENOG) and two with the Eurasia Network Operators Group (ENOG). For the first time, the RIPE NCC also held a South-East European Regional Meeting in Dubrovnik, Croatia. Meetings such as these allow the RIPE NCC to interact with, and gain feedback from, RIPE NCC members throughout our entire service region.

I would like to thank the RIPE NCC membership for its support throughout 2011. The level of interaction between the RIPE NCC and its members was exceptionally high throughout the year. This is an important factor for us and I believe it will continue to be essential in guiding the RIPE NCC as it works for the good of its membership and the Internet community in the years to come.

ABOUT THE RIPE NCC

RIPE NCC 2011

RIPE NCC SERVICE REGION



INTRODUCTION

The Réseaux IP Européens Network Coordination Centre (RIPE NCC) is an independent, not-for-profit membership organisation. It supports the operation and development of the Internet through technical coordination and operates one of the world's five Regional Internet Registries (RIRs). The RIPE NCC's most prominent tasks include:

- Registering and distributing Internet number resources
- Operating the RIPE Database
- Operating K-root, one of the world's 13 root name server clusters
- Facilitating RIPE community activities
- Providing high-quality measurement and information services

Most of the RIPE NCC's members are Internet Service Providers (ISPs) and telecommunication organisations. Other members are corporations, academic institutions and government bodies. At the end of 2011, the RIPE NCC supported 7,795 members with operations in the 76 countries in its service region. The organisation is based in Amsterdam, the Netherlands, and had 127 full-time equivalent (FTE) employees for 2011. It is an open, transparent and neutral organisation.

As with the four other RIRs, the RIPE NCC operates as a community-driven, bottom-up and self-governing organisation. The policies that govern the way the RIPE NCC operates are proposed, discussed and accepted by the RIPE community (see page 44). The activities performed by the RIPE NCC and the services provided are approved each year by the RIPE NCC Executive Board following feedback from the members.

ORGANISATION OVERVIEW

As the RIR for Europe, the Middle East and parts of Central Asia, the RIPE NCC provides Internet number resources – IPv4 and IPv6 addresses and Autonomous System (AS) Numbers – to its members. The Internet Assigned Numbers Authority (IANA) allocates blocks of IP addresses and blocks of AS Numbers to all five RIRs. Each RIR then allocates or assigns parts of these blocks to its own members. The RIRs maintain registration data for these Internet number resources and ensure that they are distributed in accordance with the policies set by the Internet community.

The RIPE NCC allocates or assigns Internet number resources and also works to ensure correct registration of the resources through education and audit activities. It also promotes the return of resources that are no longer needed by its members. This active management of Internet resources contributes to fairness and transparency in the distribution of Internet number resources and improves the accuracy of the data in the registration database.

7,795 MEMBERS IN 76 COUNTRIES

MEMBERSHIP IN 2011

Total number of members at end of 2011

7,795

Total number of membership applications

1,043

Membership growth since 2010:

628

Top 5 countries in terms of members overall at end of 2011:

1. **RU** 1,040
2. **UK** 878
3. **DE** 780
4. **IT** 487
5. **FR** 418

Top 5 countries in terms of new members in 2011:

1. **UK** 137
2. **FR** 98
3. **DE** 93
4. **RU** 92
5. **ES** 81

Membership fees (in kEUR)

Extra Small	1,300*	*Large*	4,100*
Small	1,800*	*Extra Large*	5,500*
Medium	2,550*	*Sign-up Fee*	2,000

** Additional 50 EUR per independent resource assignment*

RIPE NCC SERVICES AND ACTIVITIES

In addition to providing services related to the assignment and allocation of Internet number resources, the RIPE NCC also supports the operation and development of the Internet for the benefit of the Internet community as a whole. The RIPE NCC's services include:

DATABASE SERVICES:

- Development, operation and maintenance of the RIPE Database and operation of an Internet Routing Registry (RR)

TECHNICAL SERVICES:

- Operation of K-root, one of the world's 13 root name server clusters
- Reverse Domain Name System (rDNS) delegations
- Technical administration of Tier-0 ENUM

COMMUNITY SUPPORT AND OUTREACH:

- Administrative support for the RIPE Document Store, RIPE Working Groups, RIPE Task Forces, ENOG, MENOG and RIPE Programme Committees
- Facilitation of RIPE Meetings
- Facilitation of RIPE NCC Regional Meetings for RIPE NCC members, governments, intergovernmental organisations, industry partners and other members of the technical community in the RIPE NCC service region
- RIPE NCC Roundtable Meetings for governments, regulators and law enforcement agencies
- Representing the RIPE NCC, its members and the RIPE community at regional and global industry-related events and when liaising with governments and regulators
- Support for the Middle East Network Operators Group's (MENOG) activities
- Support for the Eurasia Network Operators Group's (ENOG) activities

TRAINING SERVICES:

- Provision of RIPE NCC Training Courses for members and other stakeholders throughout the RIPE NCC's service region
- A free online E-Learning Centre available to everyone

INFORMATION SERVICES:

- RIPE Atlas
- Domain Name System Monitoring (DNSMON)
- Routing Information Service (RIS)
- RIPEstat

POLICY DEVELOPMENT

- The RIPE NCC supports the RIPE Policy Development Process (PDP) and implements the policies decided upon by the RIPE community

THE RIPE NCC AND THE RIPE COMMUNITY

The RIPE NCC and RIPE are separate but are highly interdependent. RIPE was founded in 1989 and is a collaborative forum open to all parties with an interest in the technical development of the Internet. The term "RIPE community" is used to describe the individuals or organisations, whether members of the RIPE NCC or not, with an interest in the technical coordination of the Internet and the way the Internet is structured and managed.

Valuable input from the Internet industry, governments and regulators is channeled to the RIPE NCC through the RIPE community. There are no formal requirements for participation. The RIPE NCC provides administrative support to RIPE, the RIPE Working Groups, RIPE Task Forces and RIPE Programme Committees, such as the facilitation of RIPE Meetings and the maintenance of the RIPE Document Store and publicly archived mailing lists.

http://www.ripe.net/ripe

ORGANISATIONAL STRUCTURE

The RIPE NCC organisation consists of members, an Executive Board and RIPE NCC staff. An arbiters panel exists that can be used by RIPE NCC members to resolve disputes with other members or with the RIPE NCC regarding the RIPE NCC's services.

11 RIPE WORKING GROUPS WERE ACTIVE DURING 2011

MEMBERS

In order to request and register IPv4 or IPv6 addresses and Autonomous System (AS) Numbers, organisations and individuals can become a member of one of the world's five Regional Internet Registries (RIRs). RIPE NCC membership is open to everyone. Members are required to sign a Standard Service Agreement and pay the initial sign-up and service fees. The majority of the membership base is made up of Internet Service Providers (ISPs) and telecommunication organisations. Other members include corporations, academic institutions and government bodies.

RIPE NCC members can:

- Register and request Internet number resources (IPv4, IPv6 and Autonomous System (AS) Numbers) and use services provided for members.

RIPE NCC members have the right to:

- Provide input for, and feedback on, the RIPE NCC's Activity Plan and Budget
- Collectively adopt the RIPE NCC Charging Scheme
- Collectively approve the RIPE NCC's Financial Report
- Propose resolutions and vote on them during the RIPE NCC General Meetings
- Nominate and elect candidates to the RIPE NCC Executive Board
- Give general feedback on the RIPE NCC's activities and services through participation in RIPE Working Groups, mailing lists and RIPE NCC General Meetings

THE EXECUTIVE BOARD

RIPE NCC members elect the Executive Board. The Board currently consists of five people who:

- Represent the membership
- Provide guidance to the RIPE NCC Senior Management
- Are responsible for the overall financial position of the RIPE NCC and for keeping records that allow the current financial situation to be evaluated at any moment
- Approve the RIPE NCC Activity Plan and Budget
- Appoint the RIPE NCC Senior Management
- Call RIPE NCC General Meetings


Nigel Titley


Remco van Mook


Dmitry Burkov


Christian Kaufmann

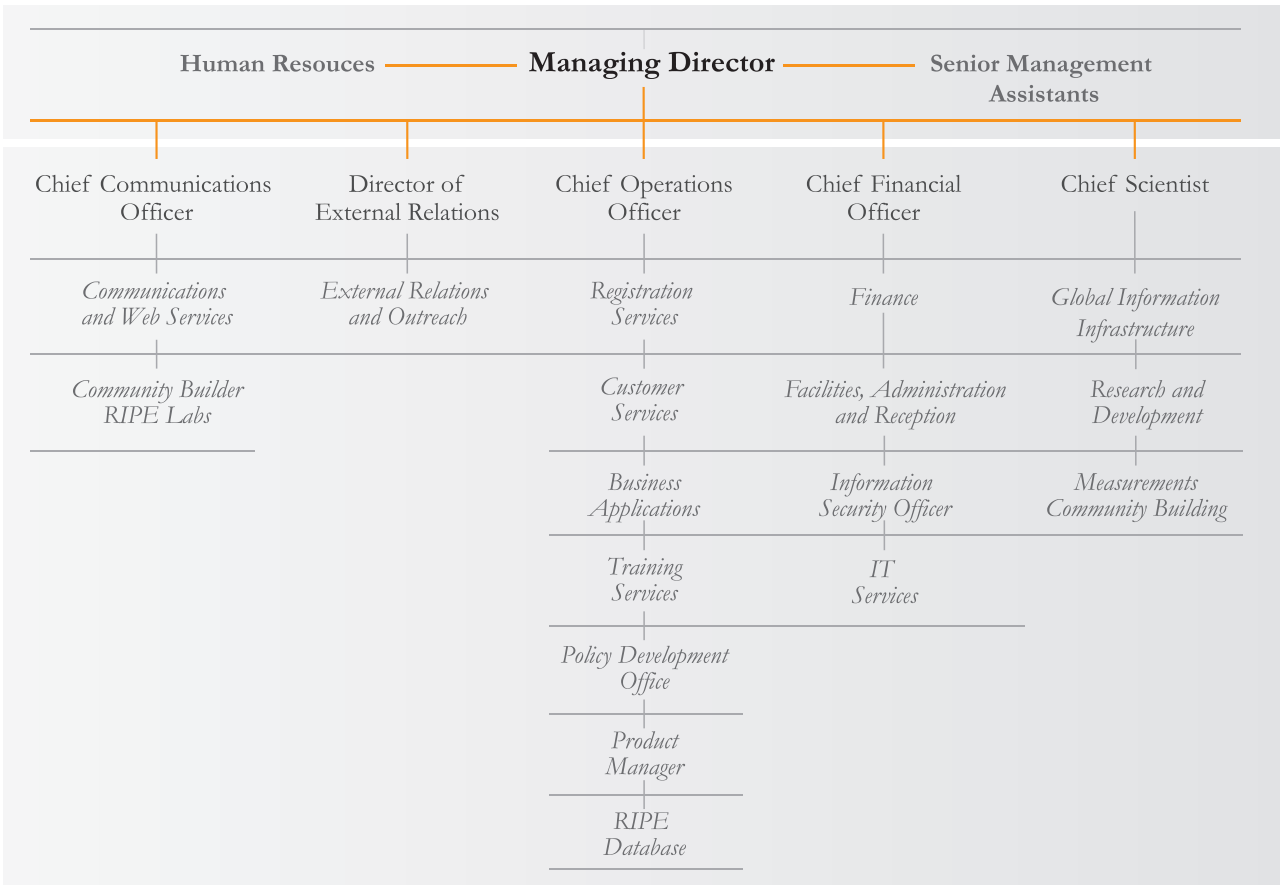

Fahad AlShirawi

RIPE NCC STAFF

In accordance with the RIPE NCC Articles of Association, the RIPE NCC Executive Board delegates to the RIPE NCC management team all operational decisions relating to the Standard Service Agreement.

THE STAFF

- Perform the RIPE NCC's operations and facilitate RIPE NCC services
- Provide administrative support to members, to the RIPE Working Groups, Task Forces, Programme Committees and to the RIPE community
- Cooperate closely with counterparts in the other four Regional Internet Registries (RIRs), with industry partners such as the Internet Society (ISOC) and the Internet Corporation for Assigned Names and Numbers (ICANN) and with governments and regulators
- Implement and facilitate the policies proposed and accepted by the RIPE community



RIPE NCC GENERAL MEETINGS

All RIPE NCC members are encouraged to attend the RIPE NCC General Meetings, either in person or remotely. Currently, these meetings are held twice a year. During the General Meetings, members can:

- Vote to accept the audited Financial Report
- Adopt the RIPE NCC Charging Scheme
- Approve any resolutions that may be proposed by the Executive Board or the RIPE NCC membership
- Elect Executive Board members

Members are also responsible for electing the Executive Board. Feedback on the RIPE NCC's activities and services can also be given directly to the Executive Board.

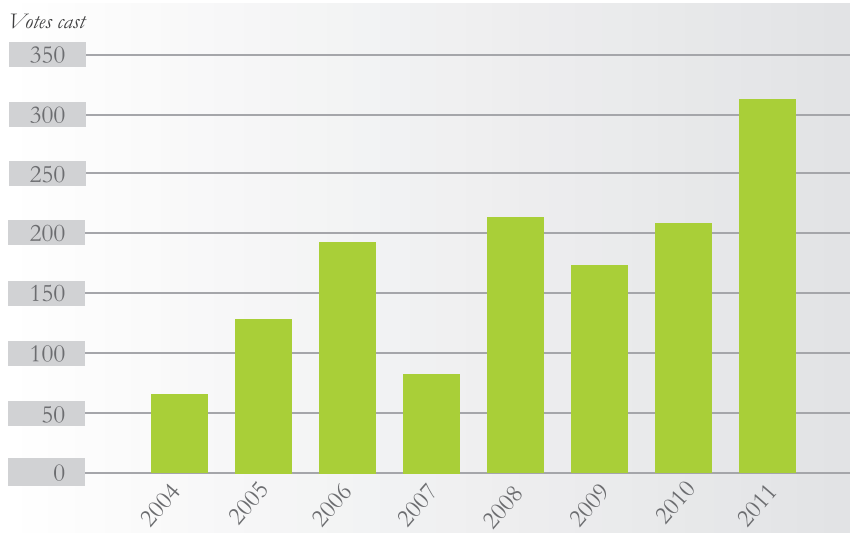
In 2011, the RIPE NCC General Meetings took place alongside the RIPE 62 and RIPE 63 Meetings. Executive Board elections were held during the General Meeting held on 6 May 2011. The term of Executive Board members Fahad AlShirawi and Andreas Wittkemper expired, and RIPE NCC members re-elected Fahad AlShirawi and elected Christian Kaufmann to the available seats.

At the General Meeting on 2 November 2011, the membership did not approve the RIPE NCC Charging Scheme 2012 and so the RIPE NCC Charging Scheme 2011 will again be used for 2012. Changes to the RIPE NCC Articles of Association (AoA) and Standard Service Agreement were approved. Provisions to extend the registration period for electronic voting were added to the AoA. David Freedman was appointed to the Arbiters Panel.

This General Meeting was the first one in which members were able to vote electronically on the resolutions to be voted on. Members could follow the General Meeting remotely via webcast and could contribute to discussions through a chat channel. The voting period was also extended until the next day to allow as many members as possible to cast their vote.

The General Meetings are only open to RIPE NCC members and RIPE NCC supporters. Minutes from each meeting are, however, available to the public.

RIPE NCC Executive Board Elections



DEFINING, SETTING AND EVALUATING RIPE NCC SERVICES AND ACTIVITIES

All the activities that the organisation performs and the services that it provides are defined, discussed and evaluated by RIPE NCC members and by the RIPE community. All proposals, plans, documents and discussions are publicly documented.

The activities that the RIPE NCC proposes to perform in the coming year are detailed in the annual Activity Plan. Input into the Activity Plan and feedback on activities is collected from members and the RIPE community via the RIPE Working Groups, RIPE mailing lists, RIPE NCC Regional Meetings and at the members-only General Meetings. The RIPE NCC Executive Board approves the Activity Plan.

ARTICLES OF ASSOCIATION

The rights and obligations of the RIPE NCC are detailed in the Articles of Association (AoA).

http://www.ripe.net/ripe/docs/articles-association

ARBITRATION

An Arbitration Panel exists to resolve any dispute related to services provided by the RIPE NCC. This Arbitration Panel operates as a neutral and objective body and is made up of technical or operational experts from the RIPE community. The RIPE NCC's Executive Board appoints the arbiters. Their appointment must then be approved by the RIPE NCC membership at the RIPE NCC General Meeting.

In 2011, the arbiters were asked to evaluate two requests for resources by the RIPE NCC and to resolve one conflict between two LIRs.

The General Meeting approved the appointment of one new arbiter, David Freedman, in November 2011.

LEGAL FRAMEWORK

In 2011, the RIPE NCC enhanced the legal framework under which it operates by reinforcing the legal structure surrounding existing RIPE NCC services. It fortified the RIPE NCC Standard Service Agreement by making its terms clearer.

The previous Standard Service Agreement and Standard Terms and Conditions have been merged into one document to improve clarity. Members' rights and obligations are clearly stated, as are the consequences of non-compliance.

The conditions under which the RIPE NCC terminates the Standard Service Agreement and deregisters Internet number resources were clarified in accordance with the procedural document, "Closure of LIR and Deregistration of Internet Number Resources". A clear statement that Internet number resources are not property was also added.

The RIPE NCC also created Terms and Conditions for new RIPE NCC services.

CORPORATE GOVERNANCE

The RIPE NCC aims to implement corporate governance best practice where possible and operates under transparent organisational, management and Executive Board structures. It has clear and open communication channels regarding its operations. There is also a clear division of responsibilities and duties between members, the Executive Board and the management team, as stated in the RIPE NCC Articles of Association.

ACTIVITIES

RIPE NCC 2011

New and Significantly Developed Activities 2011

RIPEstat

RIPEstat is a web-based information system combining the RIPE NCC's internal data with external data to deliver a comprehensive view on the state of Internet number resources.

The RIPE NCC's data includes registration data (RIPE Database), active measurement data collected from the Routing Information Service (RIS) and real-time routing data fetched from the Remote Routing Collectors (RRC). External data include geographical location data of Internet number resources and data about blacklist entries.

The user interface of RIPEstat shows the information with widgets, most of which are interactive and allow manipulations such as filtering or sorting. Currently, RIPEstat contains 21 different widgets for prefixes or Autonomous Systems (ASes). Each widget supports the option to download the data in a raw format to be used as input for further processing by users.

Since the middle of 2011, RIPEstat has also been available as a mobile version for Apple's iOS supporting 13 out of 21 widgets on the browser version. In the last quarter of 2011, the RIPE NCC began working on a dedicated raw data API and a widget framework that allows a widget to be included on any website with customised settings.

Over the course of 2011, there were 11 public RIPEstat demos that allowed the RIPE NCC to show the progress of RIPEstat to a larger audience and receive feedback. Since its inception in December 2010, RIPEstat has received over 62,000 unique visitors.

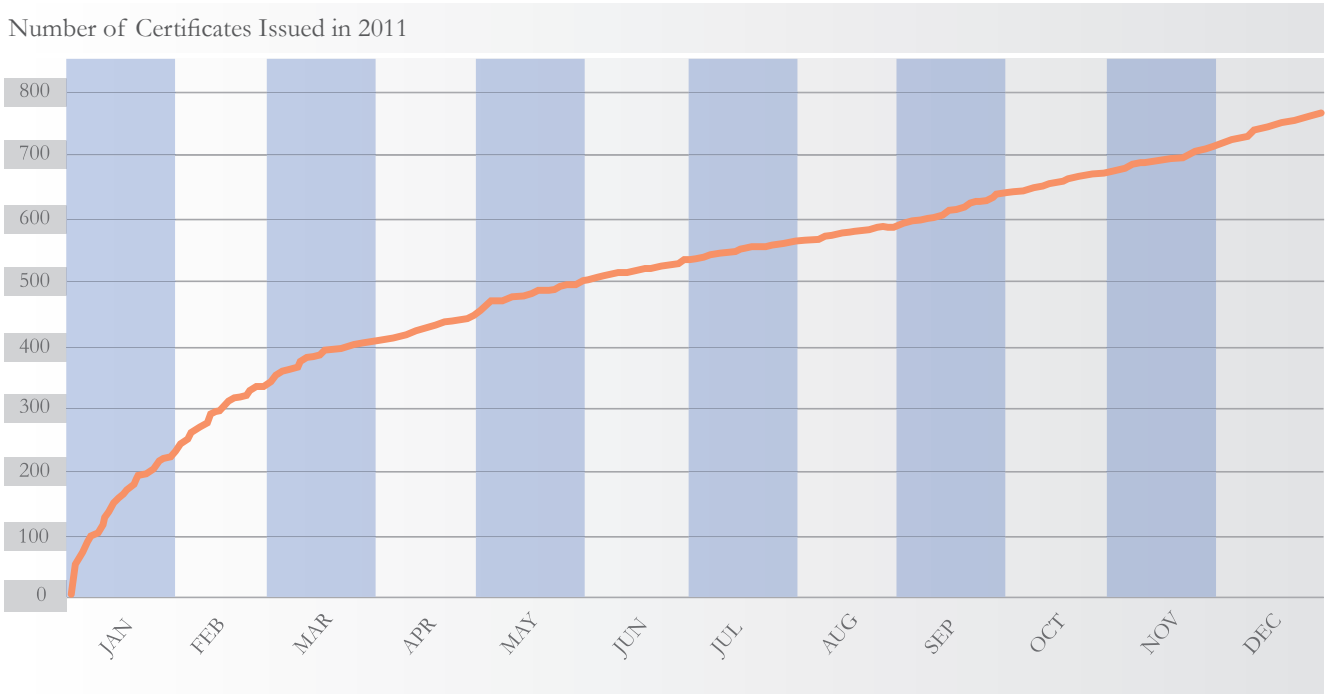
https://stat.ripe.net

SUPPORT FOR INTERNET NUMBER RESOURCE CERTIFICATION (RPKI)

The RIPE NCC strives to provide a stable and secure registry function where registry data is maintained with a high level of accuracy. The certification of RIPE NCC Internet number resource allocations is a significant enhancement to this registry function. Resource certificates issued with RIPE NCC allocations will allow RIPE NCC members to digitally certify their Internet number resources and will serve as an authoritative statement of an allocation's uniqueness and legitimacy.

Certification also has the potential to play an important role in resource transfers, as well as secure routing where it is currently providing BGP origin validation. Work on this project in 2011 focused on providing a public technology preview of the Resource Certification platform. The RIPE NCC launched certification with a robust, hosted production system with a limited feature set. It was expanded over the course of the year, giving users the ability to run their own certification software, integration with the Routing Information Services (RIS) route collector data and a comprehensive validation toolset.

By the end of 2011, approximately 10% of the RIPE NCC membership had opted to request a resource certificate and had entered routing information representing 10% of the address space in the RIPE NCC service region.



Ongoing Activities 2011

REGISTRATION SERVICES

As a Regional Internet Registry (RIR), the RIPE NCC's most prominent activity is to distribute and register IPv4 and IPv6 addresses and Autonomous System (AS) Numbers in its service region. The goal is to ensure fair distribution of Internet number resources and to maintain accurate registration data. The Internet Assigned Numbers Authority (IANA) allocates blocks of addresses to the five RIRs that exist today. The RIRs then allocate parts of these address blocks to its members. During the year, Registration Services' service levels remained stable and were comparable to the service level in 2010.

16,888 REQUESTS FOR INTERNET NUMBER RESOURCES IN 2011

REQUESTS FOR INTERNET NUMBER RESOURCES

In 2011, the RIPE NCC's Registration Services Department received a total of 16,888 requests, an increase compared to the 15,620 requests received in 2010.

These requests included requests for:

- Provider Aggregatable (PA) assignments
- Provider Independent (PI) assignments
- IPv4 and IPv6 allocations
- Autonomous System Number assignments
- Anycast assignments
- Assignments for Internet Exchange Points (IXPs)
- Assignments to Direct Assignment Users (DAUs)

From the total number of requests, 9,195 allocations and assignments of Internet number resources were made. Internet number resource allocations and assignments made by the RIPE NCC in 2011:

- IPv4: 2,114 allocations
- IPv6: 1,248 allocations
- ASN: 2,702 assignments
- PI: 2,714 (IPv4) and 371 (IPv6) assignments
- Anycast: 18 (IPv4) and 18 (IPv6) assignments
- IXP: 10 IPv6 assignments

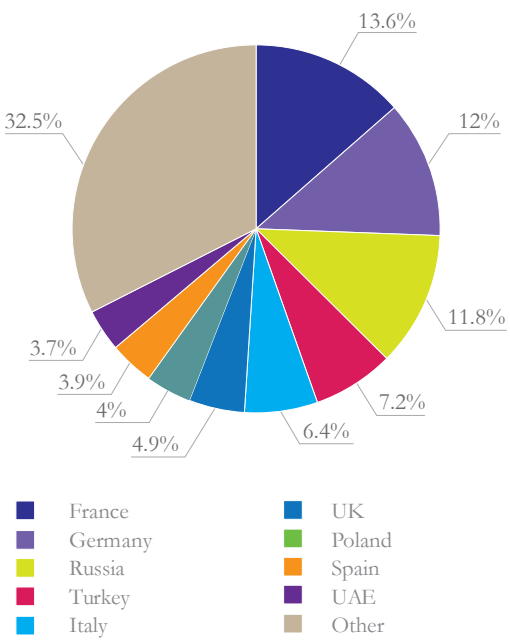
A more in-depth overview of how to request assignments and allocations can be found at:

http://www.ripe.net/lir-services/resource-management/number-resources

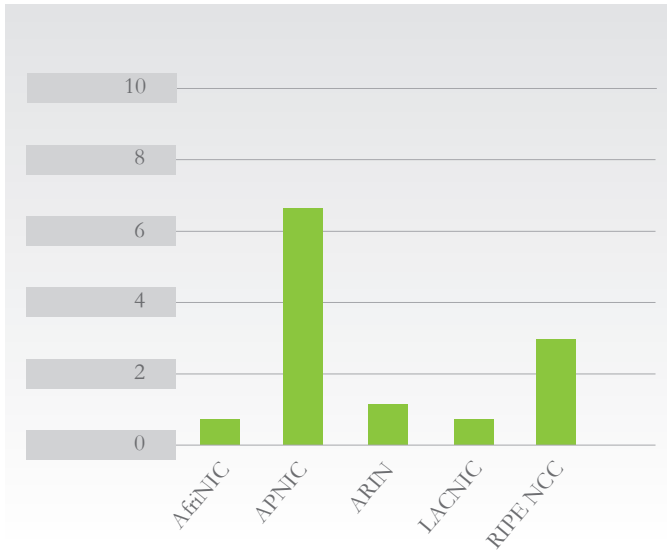
IPv4 ALLOCATIONS 2011

The RIPE NCC allocated 39,929,856 IPv4 addresses during the year. Compared with 2010, this is a 30.6% decrease in the total number of IPv4 addresses allocated. The IANA allocated one /8 block of IPv4 addresses to the RIPE NCC in 2011.

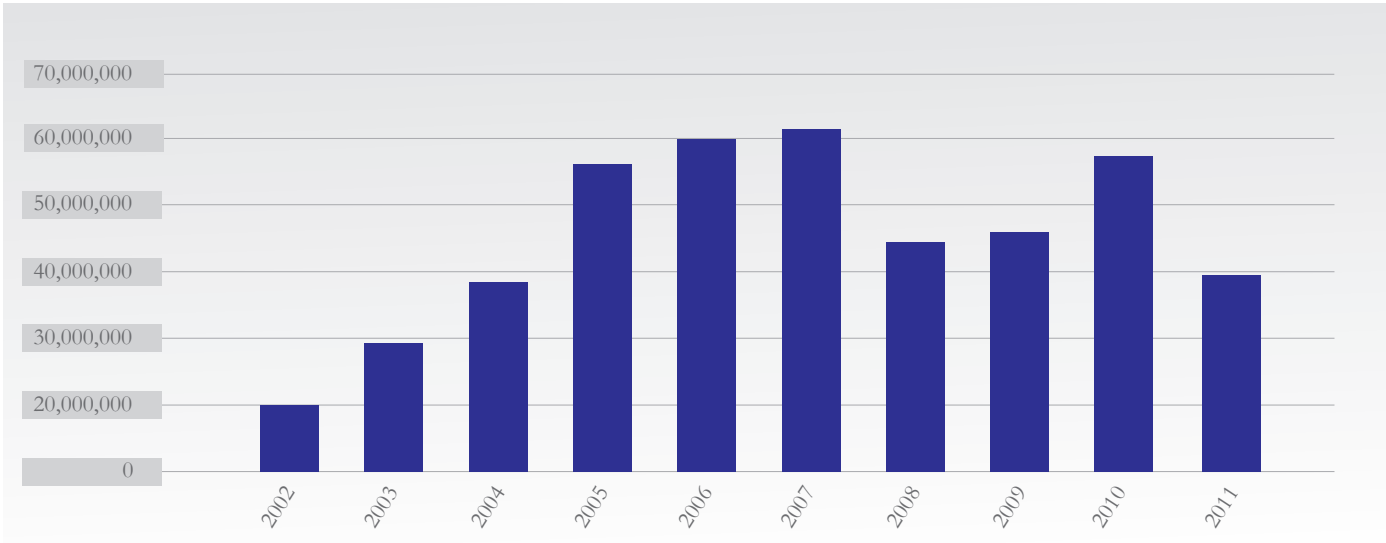
IPv4 Allocations per Country



Total number of IPv4 addresses allocated by each RIR in 2011 in /8s



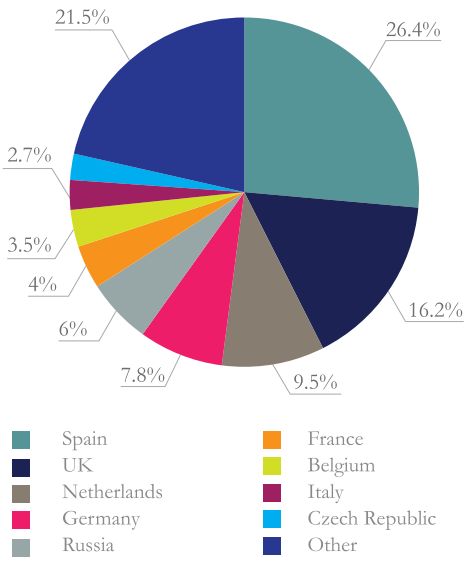
Total number of IPv4 addresses allocated by the RIPE NCC per year (2002-2011)



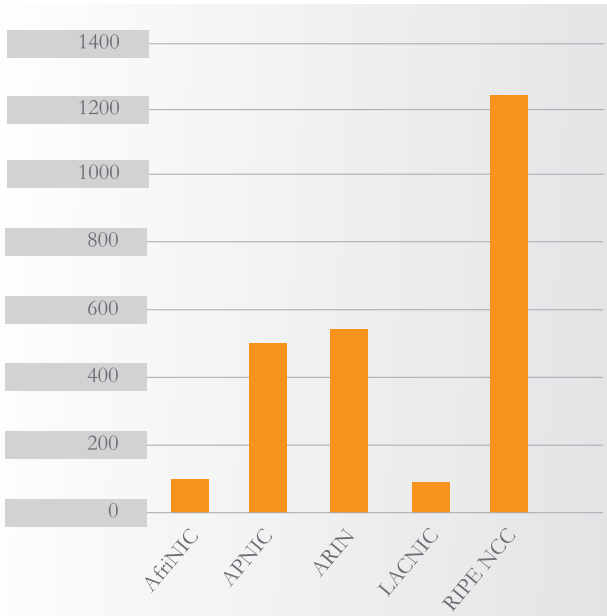
IPv6 ALLOCATIONS 2011

The RIPE NCC made 1,248 IPv6 allocations in 2011. 3,663 LIRs held an IPv6 allocation at the end of 2011, constituting 47% of the RIPE NCC membership.

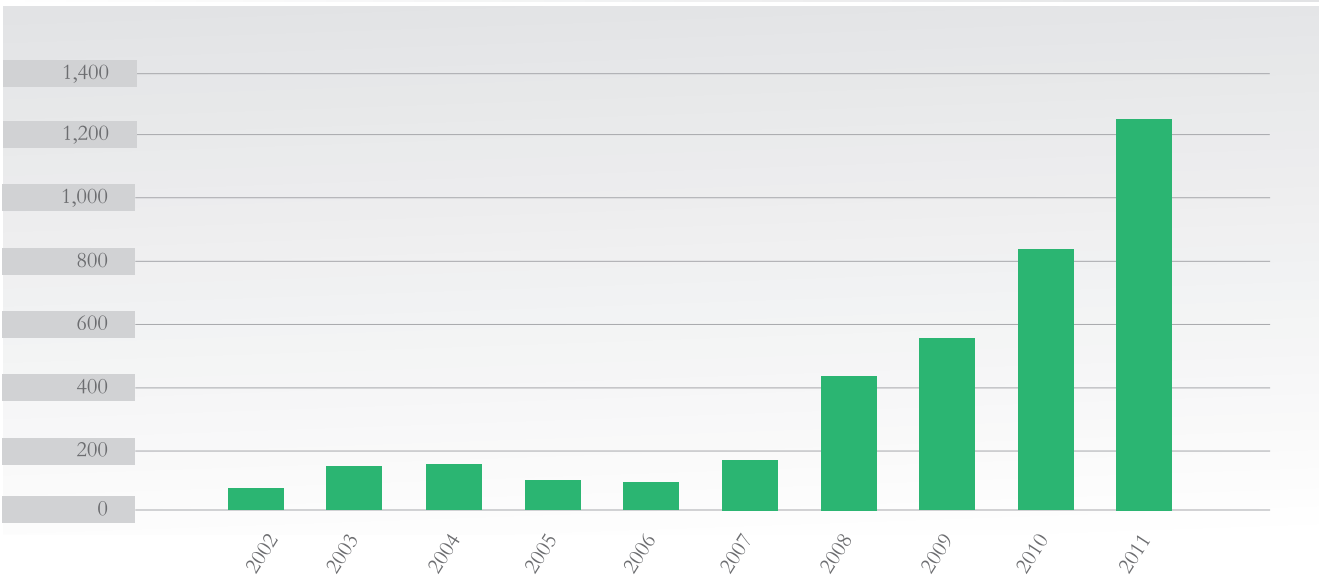
IPv6 Allocations per Country



Total number of IPv6 allocations made by each RIR in 2011



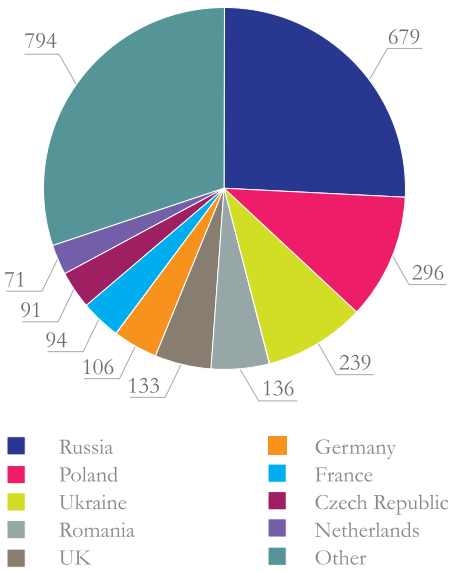
Total number of IPv6 allocations made by the RIPE NCC per year (2002-2011)



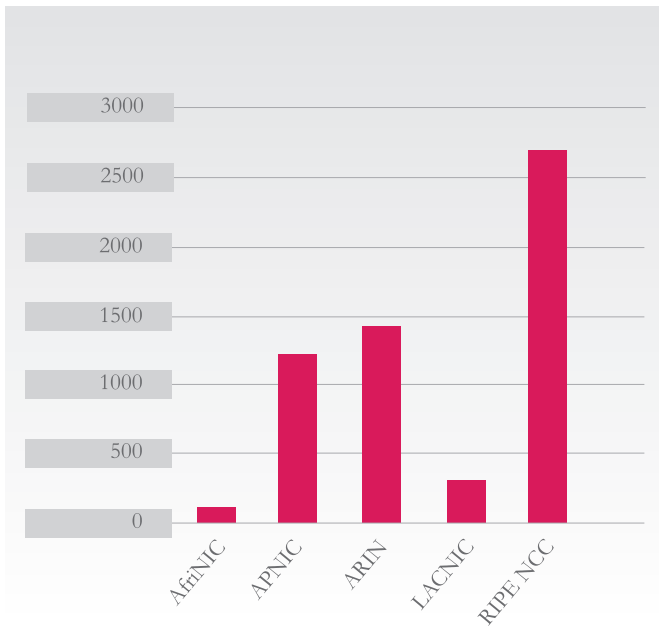
AUTONOMOUS SYSTEM (AS) NUMBER ASSIGNMENTS IN 2011

The IANA allocated 3,072 ASNs to the RIPE NCC in 2011. The RIPE NCC assigned 2,702 ASNs during the year, a 9% increase on the amount assigned in 2010.

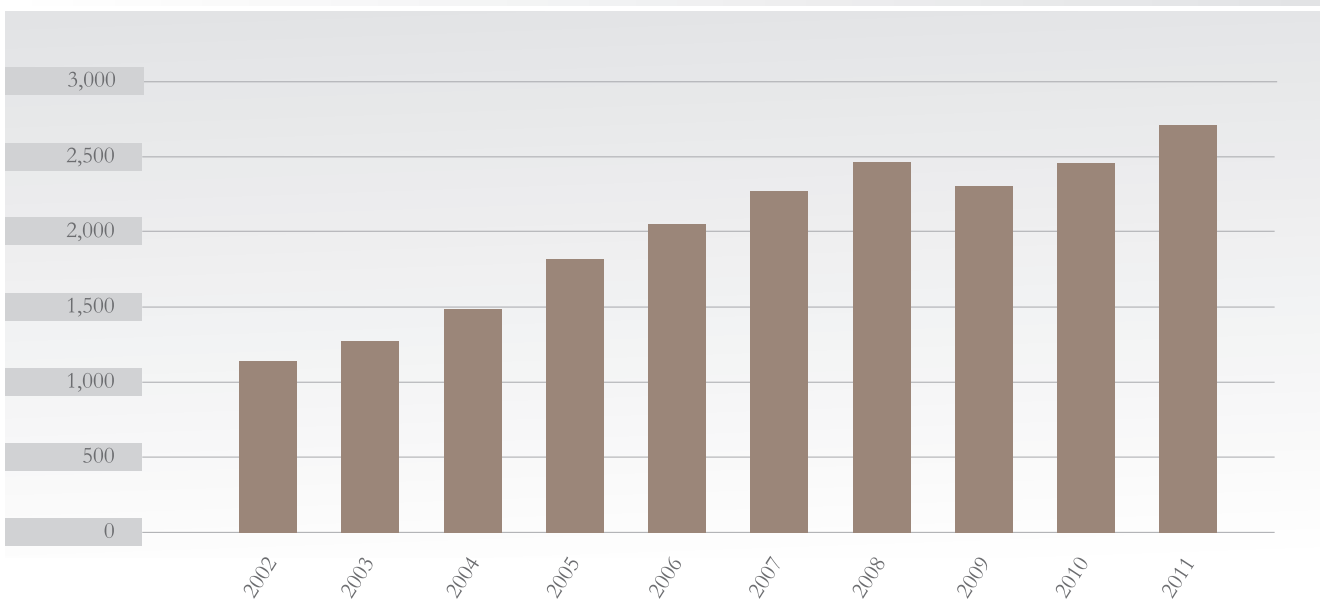
ASN Assignments per Country



Number of AS Numbers assigned by each RIR in 2011



Total number of AS Numbers assigned by the RIPE NCC per year (2002-2011)

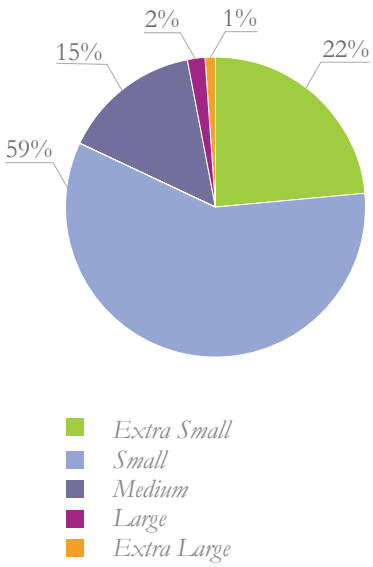


RIPE NCC AUDIT ACTIVITY

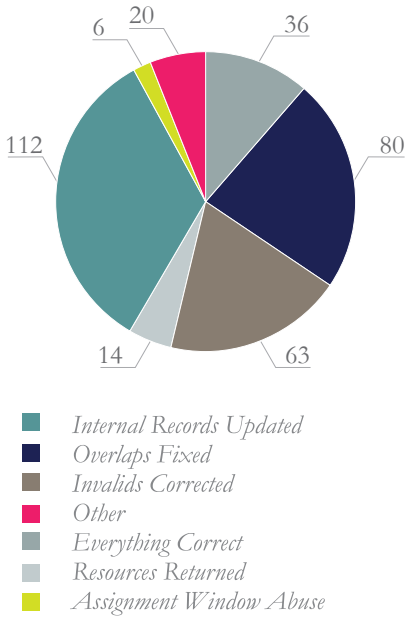
Since 1996, when the RIPE community first asked the RIPE NCC to audit LIR contact data and resource records, the community has become increasingly concerned with the quality of the data registered by RIPE NCC members and the RIPE NCC itself. This concern coincides with increased emphasis on the accurate registration of data in the RIPE registry as the free pool of unallocated IPv4 address space decreases.

The increasing emphasis on data quality can be seen in the rising rates of audits processed over the past several years and the increase in data granularity from the completed audits. Currently, the RIPE NCC is averaging approximately 400 audits a year. The data recorded for completed audits is becoming more detailed and articles related to audits are published on RIPE Labs to solicit feedback. Striking the right balance between overhead costs versus the required detail of the data is dependent upon feedback from RIPE NCC members.

Billing Category of Audit LIRs



Audit Outcomes



Audit Outcomes 2011

Billing Category	
Extra Small	69
Small	173
Medium	44
Large	7
Extra Large	2
Reasons of Audits	
External	0
Internal	4
Random	289
Extra Checks	
Extra Checks were needed	6
Extra Checks weren't needed	272
Results	
Other	20
Invalids corrected	80
Overlaps fixed	63
Resources returned	14
Internal records updated	112
Assignment window	6
Everything correct	36
Totals	
Total number of audits	393
Completed Audits	270

ASSIGNMENT AND ALLOCATION POLICIES IMPLEMENTED IN 2011

All the policies detailing the way in which the RIPE NCC allocates and assigns Internet number resources to its members are proposed, discussed, accepted or rejected by the RIPE community. The RIPE NCC implements the RIPE community-accepted policies into its operations and procedures.

In 2011, the RIPE NCC implemented six RIPE Policies:

- *2010-02 Allocations from the Last /8*
- *2010-06 Registration Requirements for IPv6 End User Assignments*
- *2010-01 Temporary Internet Number Assignment Policies*
- *2006-05 PI Assignment Size*
- *2011-01 Global Policy for Post Exhaustion IPv4 Allocation Mechanisms by the IANA*
- *2011-03 Post-depletion IPv4 Address Recycling*

In 2011, the RIPE NCC continued work to implement RIPE Policy Proposal 2007-01, "Direct Internet Resource Assignments to End Users from the RIPE NCC". The policy states that a contractual relationship must exist between an End User and a sponsoring LIR or the RIPE NCC. It also states that a contractual relationship must retrospectively be put in place for End Users of independent Internet number resources that were previously assigned.

Phase 1 of the implementation required LIRs to provide an assignment agreement between the LIR and the End User as well as official company registration documents for the End User with every assignment request for that End User.
Phase 2 gave LIRs the option to mark independent resources requested in the past as one of the following options:
- My Infrastructure (the resource holder is an LIR)
- My End User (the resource holder will sign an agreement with the LIR)
- Not My End User (the resource holder will not sign an agreement with the LIR)
More than 4,500 LIRs participated in Phase 1.

Phase 2 of the implementation provided feedback for over 24,000 independent Internet number resources. More than 7,000 resources were marked as LIRs' infrastructure, and documentation for almost 7,500 resources was provided by LIRs and approved by the RIPE NCC.

Phase 3 of the policy implementation began in March 2011, when the RIPE NCC started to directly contact the End Users of independent Internet number resources who did not sign an agreement with a sponsoring LIR during Phase 2.

By the end of December 2011, the RIPE NCC had contacted more than 6,700 resource holders to ask them to provide feedback regarding their resource usage and the sponsoring LIR they are going to sign an agreement with by filling in an online feedback form. So far, the RIPE NCC has received feedback for more than 2,500 resources covered in Phase 3 of the policy implementation. The feedback for about 1,400 of these resources was completed and the required documentation was mark as: approved; approved as LIR infrastructure; or the resources returned to the RIPE NCC.

LEGACY RESOURCE REGISTRATION

Legacy address space is the IPv4 address space that was distributed by the Internet Assigned Numbers Authority's (IANA) central registry prior to the formation of the Regional Internet Registry (RIR) system.

After the RIPE NCC was established as an RIR, IANA authorised it to take over administrative responsibility for the address space that IANA had distributed in what is now defined as the RIPE NCC service region (Europe, the Middle East and parts of Central Asia).

There are approximately 2,500 organisations in the RIPE NCC service region holding 4,500 legacy space prefixes. The RIPE NCC's efforts to register legacy address space began in 2011 with the first of four implementation phases:

Phase 1: Trial
RIPE NCC Registration Services first contacts a small number of RIPE NCC members that hold legacy space.

Phase 2: Contact Members
RIPE NCC Registration Services contacts all RIPE NCC members who hold legacy space.

Phase 3: Contact Non-Members Who Hold a /16 or More
RIPE NCC Registration Services contacts legacy space holders that are not RIPE NCC members and who hold a /16 or more.

Phase 4: Contact Non-Members Who Hold a /16 or Less
RIPE NCC Registration Services contacts legacy space holders that are not RIPE NCC members and who hold less than a /16.

RETURNED ADDRESS SPACE

Over 2.62 million IPv4 addresses were returned to the RIPE NCC during 2011. This includes over 1.31 million IP addresses from legacy allocations. A total of over 8.83 million IPv4 addresses have now been returned over the last five years, contributing towards good management of Internet number resources. The RIPE NCC re-allocates the addresses that have been returned after a quarantine period.

IMPROVING DATA CONSISTENCY

Accurate registration data is essential for the global registry system. To ensure that the RIPE Registry's data is up to date and accurate, the RIPE NCC analysed the results of its most recent efforts in this area, the Registration Data Quality project.

The RIPE NCC found that 96.09% of entries in the RIPE Database are considered accurate. It will continue to work towards increasing this percentage.

The assessment revealed that the highest scoring entries belonged to IPv4 address space distributed by the RIPE NCC, while legacy address space registered prior to the formation of the RIR system and inherited by the RIPE NCC scored lower.

RESOURCE QUALITY ASSISTANCE

The RIPE NCC takes measures to improve the routability of address space. This includes proactive actions such as announcing pilot prefixes of newly allocated IP address blocks and the quarantine times for returned IP address space. The RIPE NCC also provides information about tools to identify where an address range is filtered, lists available contact details of the organisation that filters it and helps to establish a direct communication between relevant parties.

https://www.ripe.net/lir-services/resource-management/ripe-ncc-resource-quality-assistance

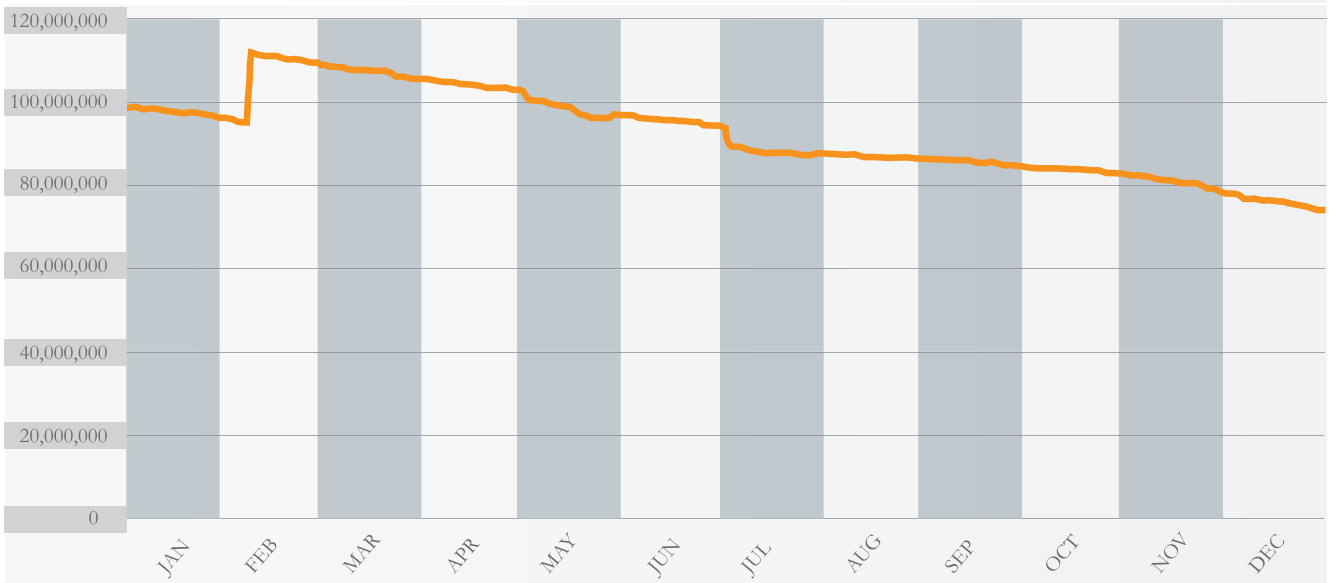
IPv4 ADDRESS EXHAUSTION

2011 saw a milestone in the history of the development of the Internet – the exhaustion of IANA's central pool of unallocated IPv4 addresses. Over the last decade, the RIPE NCC, together with the other Regional Internet Registries (RIRs), has worked to inform all stakeholders about the urgent need to adopt and deploy IPv4's successor, IPv6.

On 3 February 2011, the RIPE NCC received its last /8 of IPv4 address space from the IANA pool of available IPv4 addresses. The RIPE NCC began in 2011 to publish weekly status updates on the amount of IPv4 addresses that remain in its own pool.

https://www.ripe.net/v4exhaustion

RIPE NCC IPv4 AVAILABLE ADDRESS POOL 2011



IPv6 RIPEness

The RIPE NCC uses an IPv6 rating system called IPv6 RIPEness to measure the level of IPv6 adoption by LIRs or Direct Assignment Users (DAUs) in the RIPE NCC service region. LIRs and DAUs can achieve up to four stars by meeting the following criteria:

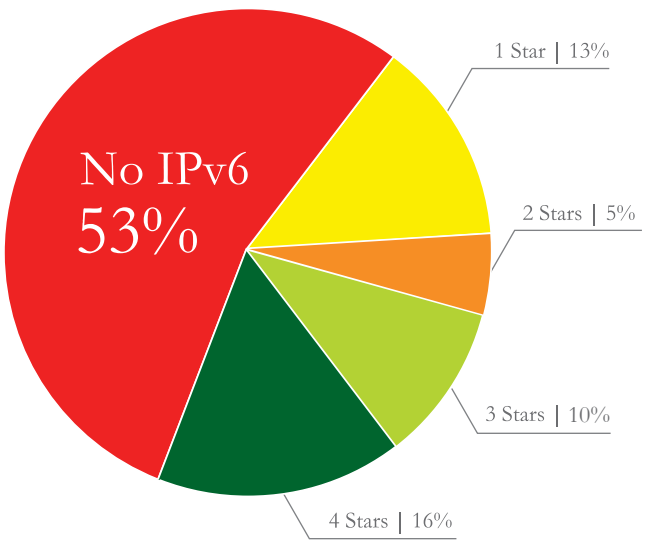
- The LIR or DAU must have received an IPv6 allocation or PI assignment
- The IPv6 prefix is visible in the Routing Information System
- A route6 object for the IPv6 prefix is registered in the RIPE Database
- Reverse DNS is set up for the IPv6 prefix

http://ripeness.ripe.net/

The RIPE NCC lists all 4-star LIRs at:

http://ripeness.ripe.net/4star/

IPv6 RIPEness: 7,907 LIRs and DAUs (as of 31.12.2011)



RIPE Atlas

RIPE Atlas is a prototype service for next generation Internet measurements. It is a distributed measurement network consisting of thousands, and potentially tens of thousands, of measurement nodes ("probes") placed all around the world, connected to a controlling framework. RIPE Atlas conducts the following types of built-in measurements:

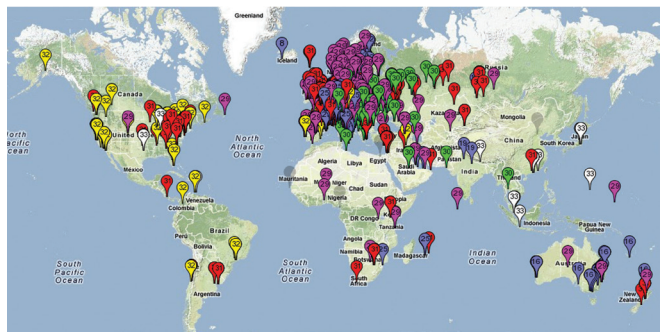
- "ping" measurements
- Traceroute measurements
- DNS (anycast) measurements

The probes are hardware devices that execute active measurements. This enables the RIPE NCC to observe Internet behaviour in real time with unprecedented detail. It also allows probe hosts and sponsors to execute their own measurements from thousands of probes.

In 2011, the RIPE Atlas network grew from 200 probes to reach its target of over 1,024 nodes on 22 December 2011, mostly in the RIPE NCC service region, but also distributed widely around the globe. The RIPE Atlas probe's functionality has been extended; it does more measurements and allows more control for its users. Results from RIPE Atlas are available to the Internet community in the form of raw measurement data and various visualisations.

https://atlas.ripe.net/

Active Probe Locations



RIPE Labs

Launched in 2009, RIPE Labs is a platform designed by the RIPE NCC for network operators, developers and industry experts to display, test and discuss innovative Internet-related tools, ideas and analysis that can benefit the RIPE community and RIPE NCC members.

2011 saw RIPE Labs become firmly established in the RIPE community, with almost 100 articles published and over 150,000 unique visitors during the year. The World IPv6 Day Measurements and Analysis articles proved to be extremely popular with visitors to the site, although there was also widespread interest in a wide range of other topics.

Comments on RIPE Labs and from attendees at events where RIPE Labs was presented showed that the RIPE community appreciated early updates on RIPE NCC activities through RIPE Labs. The platform continues to be an excellent source of feedback on proposed RIPE NCC services. In 2011, prototype services that were initially launched on RIPE Labs became fully developed services, including IPv6 RIPEness and a number of RIPE Database tools such as the abuse finder.

The RIPE Labs search function was integrated with the main RIPE NCC website in 2011, and users can now log in using RIPE NCC Access, the RIPE NCC's single sign-on system.

THE LOCAL INTERNET REGISTRY (LIR) PORTAL

The LIR Portal is the secure RIPE NCC members-only portal that enables RIPE NCC members to manage their allocations and assignments online. The RIPE NCC works continuously to develop the LIR Portal and improve usability for its members.

In 2011, the RIPE NCC Listing Service was added to the LIR Portal. This is a platform that enables RIPE NCC members to list and exchange the IPv4 address space they hold and no longer need. The listing service is only available to members and its use is included in the annual RIPE NCC membership fee.

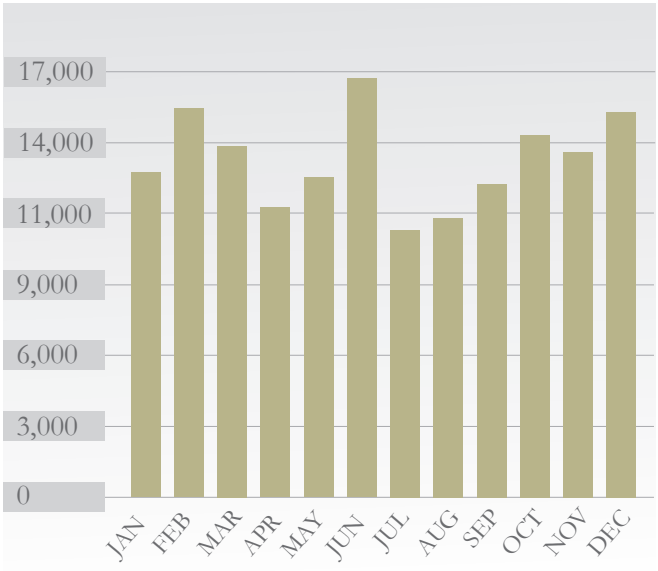
The LIR Locator, which allows people to pinpoint the location of all LIRs in the RIPE NCC service region, was also added to the LIR Portal in 2011. At the end of the year, the LIR Portal became accessible through the RIPE NCC's single sign-on system, RIPE NCC Access.

RIPE NCC CUSTOMER SERVICES

The RIPE NCC's Customer Services Team provides first-line user support and enables members to communicate with the RIPE NCC more effectively by streamlining and coordinating internal activities. The team can now be contacted via live chat as well as via a web form, by email and by telephone. During 2011, the Customer Services Team processed a total of 23,284 requests, compared to the 20,906 requests in 2010.

The team started giving support for RIPE Atlas in 2011, handling queries and applications to host probes. The initial response time to requests was maintained at one working day.

Number of Unique RIPE Labs Visitors in 2011



Customer Services Tickets 2008 - 2011

Year	FTEs	Number of Tickets
2008	6.58	15,839
2009	7.75	18,091
2010	8.17	20,014
2011	8	23,284

These requests relate to:

- RIPE Database
- DNS
- New RIPE NCC member queries and applications
- Billing and contracts
- General administration
- RIPE Atlas
- RIPE NCC Information Services
- Abuse complaints

TRAINING SERVICES

Netherlands
Germany
UK
France
Switzerland
Spain
Belgium
Albania
Russia
Poland
Armenia
Finland
Italy
Bulgaria
Ukraine
Hungary
Ireland
Serbia
Latvia
Lebanon
Austria
Sweden
Malta
Jordan
Greece
Scotland
Norway
Iran
Turkey
Romania
Moldova
Estonia
Czech Republic
Palestinian Territories

Countries visited by RIPE NCC Training Services in 2011

The RIPE NCC's Training Services Team delivers training courses to members throughout the RIPE NCC's service region. The team assists members with the correct registration and administration of Internet number resources and provides further training on more specialised areas. The following training courses were offered in 2011:

The Local Internet Registry (LIR) LIR Training Course

This course shows members how to request Internet number resources and how to interact with the RIPE NCC.

The Routing Registry (RR) Course

This course explains the features of the Routing Policy Specification Language (RPSL), the Routing Registry (RR) and related tools to experienced network operators.

IPv6 for LIRs Course

This course raises awareness about IPv6 and the current best practices for deploying it. It also covers IPv6 Internet addressing policies and how to obtain IPv6 address space.

In 2011, 99 courses were given:

- 40 LIR courses
- 40 IPv6 courses
- 19 Routing Registry courses

These courses were held in 34 countries throughout the RIPE NCC service region and attracted over 1,950 participants (250 more than in 2010). The Training Services Team also conducts surveys with participants, allowing continual improvement to the training courses it delivers, and giving valuable feedback to the RIPE NCC from members throughout its service region.

All RIPE NCC Training Courses are regularly updated to include information on any new policies accepted by the RIPE community and modifications to procedures and software.

https://www.ripe.net/training

Hosted Courses

Of the 99 training courses given throughout the year, 35 were held at venues provided by a host (14 more than in 2010). More information about hosted courses, details on how to host a course and an overview of the 2011 hosts are available at:

https://www.ripe.net/training/hosting

Training Seminars

In addition to the training courses, the RIPE NCC gave training seminars, which are condensed versions of the full training courses, at the following events in 2011:

- RIPE 62, Amsterdam
- RIPE 63, Vienna
- ENOG, Moscow
- MENOG 9, Oman

The Training Services Team was also invited to give several tailored seminars and presentations during industry conferences, operators group meetings and peering forums, such as the IGF Nairobi, the German IPv6 Congress, the UK Network Operators Forum (UKNOF), IETF 80 and many others.

RIPE NCC E-Learning Centre

The E-Learning Centre is free and available to anyone. It offers short online courses on topics relevant to the Internet industry, the RIPE community, governments and regulators. E-Learning modules also supplement the material covered in the RIPE NCC's face-to-face training courses.

In 2011, Training Services released four IPv6 modules, five RIPE Database modules and a RIPE Policy Development Process (PDP) module.

https://www.ripe.net/training/e-learning

THE RIPE DATABASE

The RIPE NCC operates and maintains the RIPE Database. The database contains information about IPv4 and IPv6 allocations and AS Number (ASN) assignments originally allocated by the RIPE NCC, as well as information about the organisations, contacts and reverse Domain Name System (rDNS) delegations relating to them. Anyone can use the RIPE Database to make queries and RIPE NCC members can use it to update information relating to their Internet number resource allocations and assignments.

During 2011, roughly 6.8 billion queries were served – an average of 13,000 queries per minute, mostly for IP address lookups. This is an increase of approximately 30% on 2010. The RIPE Database also includes the RIPE Routing Registry (RR), which is part of the global Internet Routing Registry (IRR). The IRR ensures the stability and consistency of global Internet routing by sharing information between network operators. The IRR consists of several databases, including the RIPE RR, in which network operators can publish their routing policies and routing announcements.

Throughout 2011, several updates and improvements to the RIPE Database were made:

New Query Forms

The web query forms were completely redesigned in 2011. The new system uses the RIPE NCC's API to communicate with the RIPE Database backend and has many new features and integrations. The new system has direct integration with the webupdates tool and integrally supports new services such as the Global Resource Service (GRS) and lookups. Because the system uses improved technologies, it is now much easier to fix bugs and continuously improve the functionality of the system. Navigation between different RIPE Database tools is also simplified with a consistent menu, accessible from any of the database tools pages.

New Webupdates

In 2011, the RIPE NCC redesigned the RIPE Database webupdates tool and implemented many new features. The main goal was to migrate from the old script-based system to a modern platform that ensures reliability and scalability. The new system is compatible with a wide range of modern browsers.

Global Resource Service (GRS)

The Global Resource Service (GRS) was showcased on RIPE Labs in 2010. In 2011, it became a fully functioning service integrated into the web-based query system. The RIPE NCC has mirrors of all the other RIR databases in the system as well as RADB and JPIRR, two major IRR databases. With GRS, it is now possible to get nightly snapshots of all RIR databases with a single query from the web forms or with a standard whois client.

ABOUT 6.8 BILLION RIPE DATABASE QUERIES SERVED IN 2011

Free-text Search of the RIPE Database

Another product that graduated from RIPE Labs to full production in 2011 was free-text search. With this service, it is possible to search the most recent snapshot of RIPE Database for any piece of text. Features such as grouping of results and advanced filtering make it a convenient tool for probing whois data.

Query and Update APIs

With RIPE Database Query and Update APIs, it is now possible to communicate easily with the RIPE Database from client applications and scripts. Communication happens over HTTP and with RIPE Database's RESTful API. The results are provided in XML as well as JSON. The RIPE Database APIs also support GRS Sources, so it is possible to use RIPE Database APIs as a single point of entry for doing automated searches on all authoritative resource data.

Abuse Finder

Another important tool that was developed in 2011 was the Abuse Finder, which is accessible through web and APIs. This tool traverses hierarchy and tries to retrieve the most relevant abuse contact data for any given resource or resource set for users of the RIPE Database.

RIPE Database Prototypes

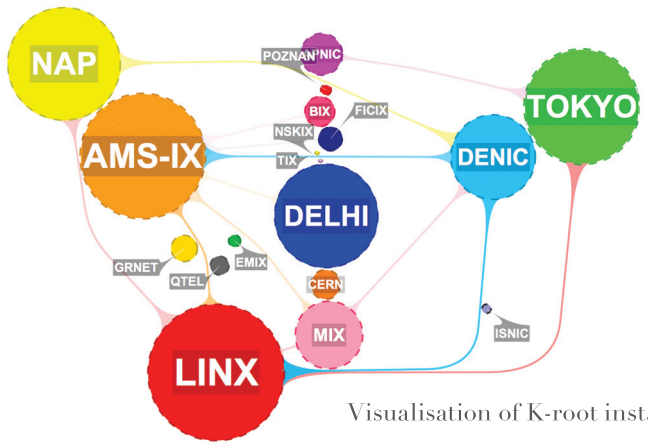
In 2011, the RIPE NCC developed a prototype for geo-location services, which was presented to the Internet community at RIPE 63. All details for the proposal and documentation on accessing the live prototype are published in the dedicated RIPE Database section of RIPE Labs:

https://labs.ripe.net/ripe-database

DNS SERVICES

As part of the technical support for allocated address space, the RIPE NCC provides primary and secondary Domain Name System (DNS) services for reverse domains. Reverse zones are used to translate IP addresses into names. For example, a reverse zone maps the address 193.0.14.129 to the name k.root-servers.net.

For the reverse zones maintained by the RIPE NCC, full DNS Security (DNSSEC) support, including zone signing and support for secure delegations, is provided. A secondary DNS service for some country code Top-Level Domains (ccTLDs) is also provided. The RIPE NCC also runs the Tier-0 registry and the DNS service for the e164.arpa domain to support ENUM.



Visualisation of K-root instances

Reverse Delegation

The RIPE NCC provides reverse domain delegations for IPv4 and IPv6 address space that it allocates and assigns. This continues to be one of the primary DNS activities. RIPE NCC members maintain their own reverse delegations by updating their information in the RIPE Database, the authoritative source for reverse zones in the RIPE NCC service region (see page 32).

Beginning in 2010, the RIPE NCC deployed a new DNS provisioning software that enables RIPE NCC members to update their delegations. Those changes are applied to the RIPE NCC's zones in near realtime. Continuing the deployment of an anycast cluster that began in 2010, the RIPE NCC continued the migration of the remaining DNS services to this system in 2011. This included the authoritative zones of the RIPE NCC and the ccTLD secondary service. The cluster is operational at two sites, in London and Amsterdam. By the end of 2011, the RIPE NCC had provisioned delegation signer records for its DNSSEC-enabled zones to all but five zones. Those remaining zones have no DNSSEC support yet. However, this brings the zones maintained by the RIPE NCC that have full DNSSEC support to more than 95%.

Secondary DNS

The secondary DNS service ensures the reliability and robustness of the general DNS infrastructure. The RIPE NCC provides a secondary DNS service for other Regional Internet Registries' reverse zones and for some ccTLD organisations, mainly in developing countries or those who have difficulty obtaining and paying for commercial DNS services. At the end of 2011, a stable secondary DNS service was provided to 76 ccTLDs, including four internationalised domain name (IDN) ccTLD domains for Syria, Jordan, Kazakhstan and Qatar. This secondary service was migrated to the new DNS cluster, adding further stability.

K-root and Anycast

The RIPE NCC operates K-root, one of the Internet's 13 root name servers. Root name servers are a crucial part of the Internet DNS infrastructure. The RIPE NCC has operated the K-root server since 1997, when the first server was installed at the London Internet Exchange (LINX). Currently, K-root consists of 18 nodes, all of which are operated by the RIPE NCC. K-root operations were stable throughout 2011. Following the 2010 roll-out of the DNSSEC signed root zone, the RIPE NCC closely monitored the impact. By the end of 2011, no negative impact was reported or detected.

http://k.root-servers.org/

ENUM

The RIPE NCC provides Domain Name System (DNS) operations for the e164.arpa zone (ENUM) in accordance with the instructions from the Internet Architecture Board (IAB).

https://www.ripe.net/data-tools/dns/enum/iab-instructions

ENUM is an Internet standard defined in RFC 3671 for mapping E.164 telephone numbers into domain names and storing these in the DNS. The RIPE NCC delegates domains for E.164 country codes to entities (Tier-1 registries) requesting them after approval is given by the ITU Telecommunication Standardization Sector – Telecommunication Standardization Bureau (ITU-T TSB). The ITU-T TSB handles delegation requests following the ITU-T Study Group 2 (ITU-T SG2) interim procedures.

http://www.itu.int/en/ITU-T/inr/enum/Pages/procedures.aspx

INFORMATION SERVICES

The RIPE NCC's Information Services support the RIPE community with operational information and provide data about the state of the Internet in the RIPE NCC service region and beyond. Most of these services, tools and data are offered free of charge to everyone. Because the RIPE NCC is neutral and impartial, the data and reporting is widely trusted.

Test Traffic Measurement (TTM) Service

The RIPE NCC TTM service enables users to continuously monitor the connectivity of their networks to other points on the Internet using a neutral and reliable measurement system. TTM test-boxes are deployed at participating hosts and measurement traffic is sent between them.

In 2011, the RIPE NCC started an evaluation on the future of TTM and possible synergies with the RIPE Atlas probe network (see page 29). Feedback from TTM hosts has been collected and a plan for the future development of TTM will be released in 2012.

https://www.ripe.net/ttm

Domain Name System Monitoring (DNSMON)

DNSMON uses the TTM test-boxes to provide an objective overview of DNS root servers and participating Top-Level Domain (TLD) name servers. The measurements show the quality of the DNS and enable users to distinguish between server-side and client-side problems.

To enable DNSMON users to get the most benefit from the data, the RIPE NCC improved the system performance in 2011. Subscribers of the service can now see measurement results within about five minutes after they have been performed on the network. The RIPE NCC also worked on the overall reliability and performance of the plots generated by the system and the system is now much more responsive as a result. By the end of 2011, 29 TLDs were using DNSMON.

https://dnsmon.ripe.net

Routing Information Service (RIS)

RIS keeps track of changes in the global Internet routing system by collecting and storing Border Gateway Protocol (BGP) routing information using 14 Remote Route Collectors (RRCs) located at major Internet exchanges around the world. In 2011, these RRCs held over 650 peering sessions. RIS holds a complete routing history of the Internet for the past decade, which is available as a raw data download, while the most recent three months of data can be queried via a variety of tools.

https://www.ripe.net/data-tools/stats/ris

https://www.ripe.net/projects/ris/rawdata.html

RIPE NCC IN THE INTERNET INDUSTRY

RIPE NCC 2011

EXTERNAL RELATIONS

In October 2011, External Relations (ER) was established as a separate department within the RIPE NCC. Headed up by Director of External Relations Paul Rendek, the ER Team is tasked with coordinating the RIPE NCC's engagement with external stakeholders, including technical groups, government, regulators, intergovernmental organisations, law enforcement agencies and civil society.

This change in the RIPE NCC's organisational structure reflects the growing importance of Internet governance discussions and the expanding range of forums in which Internet governance issues are being raised.

The primary goals of the RIPE NCC in this area are to:

• Support and represent the interests of the RIPE NCC's membership and the RIPE community
• Communicate the RIPE NCC's role in IP administration and management, and the technical coordination of the Internet
• Gain and continue the support for the long-established, bottom-up, industry self-regulation processes and open structures through which RIPE and the RIPE NCC operate
• Ensure that the RIPE NCC and the RIPE community continue to play an effective role in the further formalisation of Internet administration, particularly technical coordination and the development of policy related to Internet number resource distribution
• Promote the RIPE Policy Development Process and encourage participation in policy development
• Promote RIPE Labs and develop and encourage participation in RIPE Labs among the Internet community

The RIPE NCC has also continued to work closely with Racepoint Group, a global public relations consultancy, to establish the RIPE NCC as a key player in the Internet community and to highlight the organisation's role as a trusted source of data and its support for the infrastructure of the Internet.

The RIPE NCC has worked with Racepoint Group since 2008 to:

• Develop and distribute press releases
• Provide support for press activities at RIPE NCC and industry events
• Identify opportunities to get key messages into industry-related publications and the global media
• Liaise and foster relations in multi-stakeholder environments (governments, regulators etc.)
• Respond to industry news with expert comment and informed opinion

Public relations activities in 2011 resulted in over 2,770 pieces of coverage in targeted media (national, technology, business and public sector publications). This represents an increase of 178% on the 2010 campaign.

Media briefings and articles written on behalf of RIPE NCC's Senior Management were placed in key media throughout the year, positioning the RIPE NCC as an industry leader on IPv6 deployment, DNSSEC and other key Internet industry issues.

RIPE NCC ON SOCIAL MEDIA

To maximise opportunities for engagement with the Internet community, the RIPE NCC is engaged in a targeted social media campaign. Increasing the RIPE NCC's presence on key social media platforms (Twitter, Facebook, YouTube and Linkedin) has kept the organisation at the centre of dialogue regarding the future of the Internet, further raising its profile as a key industry influencer.

https://www.ripe.net/contact/social-networking

IPv6 ACT NOW

The IPv6 Act Now website was launched in June 2009. Designed as a comprehensive resource for IPv6-related information, the website seeks to engage a wide-ranging audience, including business, government and the technical communities. The site features the latest developments in IPv6 deployment, news items, statistics and interviews with key players in the Internet industry. In 2011, the IPv6 Act Now site expanded the range of statistics and educational information regarding IPv6 deployment.

http://www.ipv6actnow.org

THE INTERNET GOVERNANCE FORUM (IGF)

The sixth IGF was held from 27-30 September 2011 in Nairobi, Kenya. This was the first event of the IGF's second five-year remit from the UN General Assembly, and attracted more than 2,000 on-site attendees, more than 800 remote participants and representatives from 125 national governments. The RIPE NCC participated on its own behalf and together with the other Regional Internet Registries as the Number Resource Organization (NRO).

While not a decision-making body, the IGF provides an important opportunity for the many different stakeholders in the

Internet community to come together and discuss Internet governance issues.
IGF 2011 featured 122 workshops on topics as diverse as Internet governance models, technical developments, cross-border legal issues and industry challenges in the developing world.

The Number Resource Organization organised two sessions:
• Enhancing Understanding: Facilitating Internet Governance Through Openness and Transparency
• Understanding IPv6 Deployment and Transition
For more information on the IGF and the NRO's participation, see:

https://www.nro.net/news/internet-governance-forum-2011-in-nairobi-kenya

http://intgovforum.org

ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)

The RIPE NCC has been involved with the work of the OECD's committee for Information, Computer and Communication Policy (ICCP) and the Working Party on Communication, Infrastructures and Services Policy (WP CISP) since 2007, working on its own behalf as well as together with the other Regional Internet Registries (RIRs) and through the Internet Technical Advisory Committee (ITAC).

The RIPE NCC has been ITAC's formal point of contact for the WP CISP, a role that the RIPE NCC has performed since 2010. The RIPE NCC's responsibilities include gathering feedback and input on official OECD from the other ITAC members, submitting formal responses to the member states and making interventions on behalf of the ITAC during the meetings.
Over the year, the RIPE NCC sent representatives to the following OECD Meetings held at the OECD headquarters in Paris, France:
• WP CISP Meetings, 6-7 June and December 5-6
• High Level Meeting on the Internet Economy, 20-21 June 2011
The ITAC also held a face-to-face meeting in June.

In 2011, as well as attending the regular, twice yearly meetings of the CISP, RIPE NCC representatives took part in the OECD high-level meeting, "The Internet Economy: Generating Innovation and Growth". Held at the OECD offices in June, the meeting attracted representatives from government, industry, civil society and the technical community to discuss a range of Internet governance issues, including IPv6 adoption.

The meeting produced a public Communiqué on Principles for Internet Policy-Making. A link to this document, as well as other information on the high-level meeting, can be found at:

https://www.oecd.org/internet/innovation

Information about ITAC can be found online at:

http://www.internetac.org

RIPE NCC ROUNDTABLE MEETINGS

The RIPE NCC has been holding Roundtable Meetings for Governments and Regulators since 2005. Since 2009, these meetings have been supplemented with adjacent Roundtable Meetings for Law Enforcement Agencies (LEAs).

These meetings are designed to enhance cooperation between the technical community in the RIPE NCC service region and local governments, regulators and LEAs. Attendance at these meetings is by invitation only.
The RIPE NCC Roundtable Meeting for Governments and Regulators was held on 12 September 2011 in Amsterdam. There were 28 attendees from eight countries, and topics discussed included:
• World IPv6 Day Report
• Registration Data Quality
• Internet Number Resource Certification (RPKI)
•Internet Governance Update/IGF Preparations

https://www.ripe.net/meetings/roundtable

RIPE NCC AND LAW ENFORCEMENT AGENCIES

On 16 March 2011, the RIPE NCC hosted a Roundtable Meeting for LEAs. Representatives from law enforcement and cybercrime units came together with staff from the RIPE NCC and representatives from the other Regional Internet Registries (RIRs) and members of the RIPE community to discuss areas of common interest.

The RIPE NCC also liaises with LEAs through the Cyber Crime Working Party (CCWP), which is a communication platform where operational and policy issues are discussed. The CCWP was created to enhance cooperation between LEAs and the technical community in the RIPE NCC service region.

If required the RIPE NCC provides training courses to LEAs aiming to better understand the workings of the RIR system and of the RIPE community. During the year, the RIPE NCC also

participated in various events organised by the European Commission and the Council of Europe regarding cybercrime.

RIPE COOPERATION WORKING GROUP

The RIPE Cooperation Working Group was established in 2008 on the recommendation of the RIPE Task Force on Enhanced Cooperation, and held its first session at the RIPE 57 Meeting. The Cooperation Working Group provides valuable dialogue with the RIPE community about issues that affect governments, regulators and law enforcement agencies.

The Cooperation Working Group met twice in 2011, and discussed subjects including Internet intermediary liability, engagement with the European Union and European Commission, the ICANN Government Advisory Committee (GAC) activities and the ongoing evolution of the Internet Governance Forum.

THE NUMBER RESOURCE ORGANIZATION (NRO)

The NRO serves as a coordinating mechanism for the Regional Internet Registries to act collectively on matters relating to the interests of the RIRs. It offers a single contact point that enables global partners and other interested parties to reach the RIRs collectively. This means that a global, uniform view supported by all five RIRs can be presented when necessary.

The directors of each RIR make up the NRO Executive Council (EC). The EC positions of Chairman, Secretary, Treasurer and Member rotate between the RIRs on a yearly basis.

The 2011 EC positions were:

- Chairman: Raúl Echeberría (LACNIC)
- Secretary: John Curran (ARIN)
- Treasurer: Paul Wilson (APNIC)
- Members: Adiel Akplogan (AfriNIC) and Axel Pawlik (RIPE NCC)

THE NRO NUMBER COUNCIL (NRO NC)

The NRO NC is comprised of three people from each RIR's local Internet community and acts as an advisory body to the NRO EC. The NRO NC also performs the role of the Address Supporting Organization Address Council (ASO AC).

THE ADDRESS SUPPORTING ORGANIZATION (ASO)

The ASO is one of the three supporting organisations required by the ICANN bylaws. The ASO reviews recommendations on global IP address policy and advises the ICANN Board on these matters. The ASO Address Council (AC) appoints two directors to the ICANN Board of Directors. ASO AC members are appointed from each of the five RIR regions. The local Internet community in each region selects two members and the Executive Board of each RIR appoints one member to the ASO AC.

In 2011, the representatives from the RIPE NCC's service region, and their three-year terms, were:

- Wilfried Woeber* (UniVie/ACOnet): 1 Jan 2009-31 Dec 2011
- Dave Wilson (HEAnet): 1 Jan 2010-31 Dec 2012
- Hans-Petter Holen (Visma IT): 1 Jan 2011-31 Dec 2013

* Wilfried Woeber holds the position selected by the RIPE NCC Executive Board. At RIPE 63 in November 2011, his term was renewed until 31 December 2014.

www.aso.icann.org

RIPE AND THE RIPE POLICY DEVELOPMENT PROCESS

RIPE NCC 2011

RIPE NCC AND THE RIPE COMMUNITY

RIPE (Réseaux IP Européens) is a collaborative forum open to all parties with an interest in wide area IP networks and the technical development of the Internet. It has existed since 1989. The RIPE community's objective is to ensure the administrative and technical coordination necessary to enable the smooth and stable operation of the Internet.

The RIPE NCC and RIPE, although similar in name, are separate. They are, however, highly interdependent. The RIPE NCC provides administrative support to RIPE and the RIPE Working Groups, such as the facilitation of RIPE Meetings and the maintenance and development of the RIPE Document Store and publicly archived mailing lists.

The RIPE community is the collective term for individuals or organisations, whether members of the RIPE NCC or not, with an interest in the technical coordination of the Internet and the way the Internet is managed, structured or governed. It provides the RIPE NCC with crucial input from the Internet industry, the public, governments and regulators. There are no membership requirements for participation in RIPE. All activities are performed on a voluntary basis, except those performed by the RIPE NCC, and decisions are formed by consensus using the RIPE Policy Development Process (PDP – see page 44). All of RIPE's activities are documented, archived and available to the public.

RIPE WORKING GROUPS

In order to discuss technical or service issues and policy proposals, the RIPE community formed a number of RIPE Working Groups. Each of the working groups uses mailing lists that are open to anyone and publicly archived to facilitate discussion. The RIPE Working Groups also meet twice a year in dedicated sessions during RIPE Meetings. Working groups can be formed or disbanded as necessary by the RIPE community.

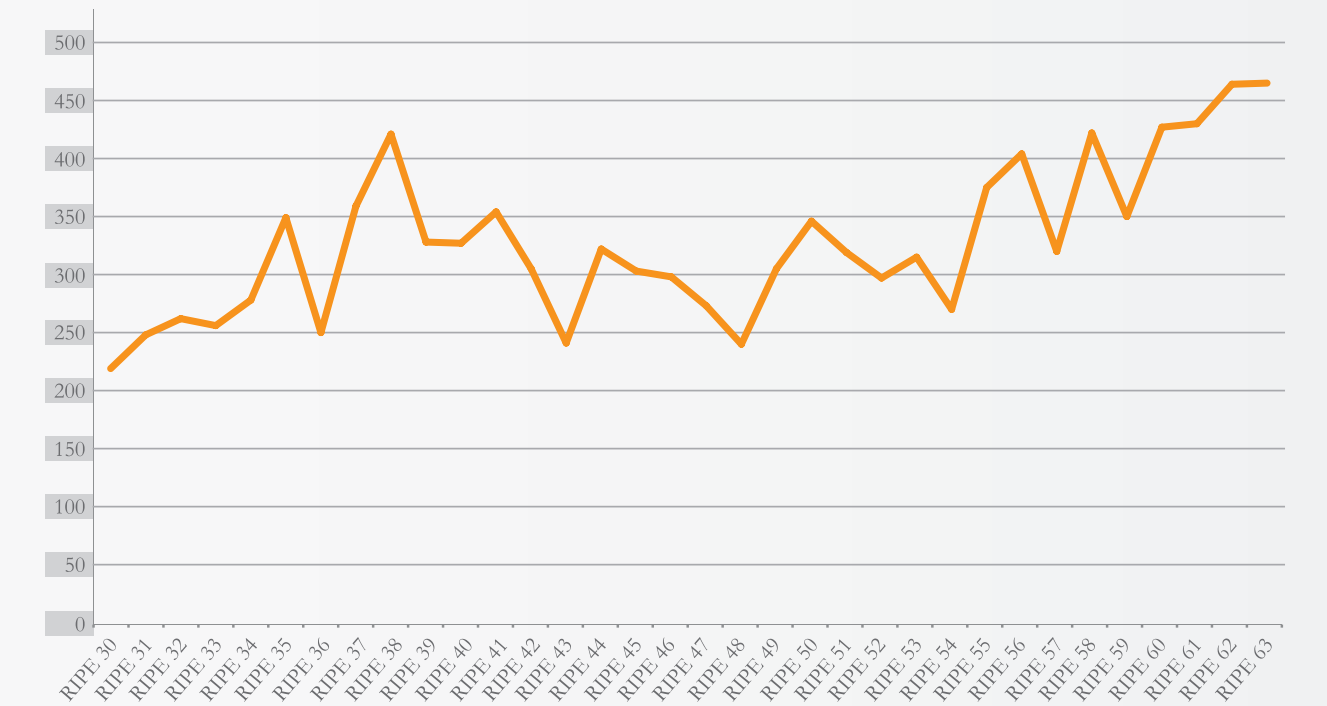
Active RIPE Working Groups

- Address Policy Working Group
- Anti-Abuse Working Group
- Cooperation Working Group
- Database Working Group
- DNS Working Group
- EIX Working Group
- ENUM Working Group
- IPv6 Working Group
- MAT Working Group
- RIPE NCC Services Working Group
- Routing Working Group

RIPE TASK FORCES

Task forces are groups of individuals who have a collective interest in performing specific tasks for the good of the RIPE community. Task forces designate a coordinator, who is responsible for making sure that progress is made and that results are achieved within the time frame that the task force has agreed. The outcome of a task force's work is usually a report with recommendations. The recommendations are discussed by the RIPE community and implemented when agreement is reached.

RIPE Meeting Attendance



The following RIPE Task Forces were active during 2011:

- The RIPE Certification Task Force
- The RIPE Task Force

RIPE MEETINGS

The RIPE NCC supports and facilitates RIPE Meetings. Held twice a year, these five-day events are open to everyone, although registration is required. RIPE Meetings bring together key industry players, network operators, governments, regulators and individuals to discuss the technical, administrative and policy issues surrounding IP networking. Relevant tutorials, trainings and demonstrations are also provided.

The RIPE NCC facilitates remote participation and feedback mechanisms during RIPE Meetings for those who are unable to take part in person. All sessions are webcast and audiocast, and remote participants can contribute to discussions during the meeting sessions using Internet Relay Chat (IRC). Live transcripts of the sessions are also provided for attendees. In 2011, the RIPE 62 Meeting was held in Amsterdam and the RIPE 63 Meeting was held in Vienna. Both of these RIPE Meetings had record number of registered attendees.

THE RIPE PROGRAMME COMMITTEE

The RIPE Programme Committee (PC) is responsible for ensuring that the RIPE Meeting programme consists of interesting, relevant and inspiring content. Comprised of up to eight volunteers from different parts of the RIPE community, the RIPE PC plans and develops the programme for each RIPE Meeting.

The PC members for RIPE 63 were:

- Osama I. Al-Dosary (MENOG Representative)
- Daniele Arena
- João Damas (Chair, RIPE Working Group Chair Representative)
- Rob Evans
- Harald Michl (RIPE 63 Host Representative)
- Andrei Robachevsky (ENOG Representative)
- Sander Steffann
- Todd Underwood

RIPE NCC REGIONAL MEETINGS AND SUPPORT

The RIPE NCC aims to increase regional participation in community-driven processes from the full range of Internet stakeholders, including RIPE NCC members, governments and law enforcement agencies (LEAs). The RIPE NCC works with these different stakeholders to encourage capacity building and training in regional areas, focusing on the practical details of IPv6 deployment and crucial issues related to Internet governance.

The RIPE NCC service region is made up of 76 diverse countries at varying stages of Internet development. With the significant growth of the IT and Internet industries in the Middle East, Russia and South Eastern Europe (and the resulting increase in RIPE NCC members), the RIPE NCC is focused on increasing the participation of Internet stakeholders from these areas of its service region. By working with the different communities in these areas, the RIPE NCC is encouraging increased regional participation, both in the activities of the RIPE NCC and the RIPE Policy Development Process. The aim is to strengthen the RIPE community by enabling regional communities to participate more fully in policy development and to ensure that regional concerns, issues and needs are represented.

The RIPE NCC has provided extensive support in the establishment of regional Network Operator Groups (NOGs). Building on the establishment of the Middle East Network Operators Group (MENOG) in 2007 and the Eurasian Network Operators Group (ENOG) in 2011, the RIPE NCC will continue to supply the technical and administrative expertise required to develop existing NOGs and assist in the creation of any new groups required by the Internet community.

The main goals of the RIPE NCC's work in this area are to:

- Encourage the cooperation of operators from countries in specific regions, enabling them to exchange information and discuss the issues that affect them
- Enable the RIPE NCC to further support Local Internet Registries (LIRs) in a given region and to continuously evaluate and address the changing needs of RIPE NCC members
- Identify, discuss and solve the specific issues affecting operators in a given region through increased awareness of the latest developments in the Internet industry
- Encourage broader involvement in the RIPE PDP
- Broaden the legitimacy of RIPE and the RIPE NCC so as to promote technical community solidarity across the entire RIPE NCC service region

RIPE DAYS

To increase regional participation in RIPE community matters, most RIPE NCC Regional Meetings include a dedicated RIPE Day. A RIPE Day enables attendees to find out more about the RIPE Policy Development Process (PDP) and the work of the RIPE community. It is also an opportunity to discuss policy proposals currently in the PDP, enabling attendees to play a more informed and effective role in PDP discussions. In some cases, this means that the relevant policies and policy proposals are presented in the local language, either by translators or, in some cases, by the presenter.

Representatives from the RIPE community and the RIPE NCC highlight a number of the current discussions in some of the RIPE Working Groups and typically present on those topics most relevant to the regional community. Although RIPE policies are presented and potentially discussed during the RIPE Day, it is important to note that, just as at RIPE Meetings, no decisions can be made at the event itself. It is made very clear to all meeting participants that input is only formally taken into account if it is sent to the appropriate working group mailing list, and this is encouraged throughout the meetings. The overall objective of these RIPE Days is to ensure that the greater community is both informed and encouraged to engage in the RIPE community and the RIPE PDP.

THE RIPE POLICY DEVELOPMENT PROCESS (PDP)

The RIPE community develops and sets policies for the technical coordination of the Internet and the distribution of Internet number resources through a long-established, open, bottom-up process of discussion and consensus-based decision-making. This process is called the RIPE Policy Development Process (PDP). Anyone can suggest a new policy or a change to an existing policy.

Although it provides administrative support for the RIPE PDP, the RIPE NCC does not accept or reject any policy. The RIPE community is responsible for this. All policy proposals must complete the phases of the RIPE PDP. If, according to the chairs of the relevant RIPE Working Groups, there is consensus in the RIPE community to accept a proposal, it completes the PDP and "acceptance" is declared. The RIPE NCC then implements the policy into its working procedures.

www.ripe.net/ripe/policies

Concluded Proposals

Six proposals completed the PDP in 2011 and were accepted with the RIPE community's consensus:

2010-02, "Allocations from the Last /8"
The proposal updated ripe-530, "IPv4 Allocation and Assignment Policies for the RIPE NCC Service Region", adding a description of how the RIPE NCC will distribute address space from the last /8 IPv4 block received from the IANA.

2010-06, "Registration Requirements for IPv6 End User Assignments"

This proposal created a new policy to define the use of a new status attribute for IPv6 objects in the RIPE Database. Organisations can now register the multiple IPv6 assignments out of their allocations more easily.

2010-01, "Temporary Internet Number Assignment Policies"
With the acceptance of the proposal, the RIPE NCC is allowed to reserve a pool of IPv4 and Autonomous System (AS) Numbers to use for temporary assignments. Secondly, all temporary resources are assigned on a strictly temporary basis, ensuring that they can be quickly re-assigned to other End Users after the assignment period expires.

2006-05, "PI Assignment Size"
This proposal updated the "IPv4 Allocation and Assignment Policies for the RIPE NCC Service Region" and now IPv4 PI space is assigned in multiples of /24. The End User must demonstrate the intention to multihome.

2011-01, "Global Policy for Post-Exhaustion IPv4 Allocation Mechanisms by the IANA"
This Global Policy Proposal described the process IANA will follow to allocate IPv4 resources to Regional Internet Registries after the central pool of addresses is exhausted.

2011-03, "Post-Depletion IPv4 Address Recycling"
This proposal clarified the policy of allocations from the last /8 IPv4 block as described in section 5.6 of ripe-530, "IPv4 Address Allocation and Assignment Policies for the RIPE NCC Service Region". All IPv4 space eventually returned to the RIPE NCC address pool will be distributed according to the policies defined by RIPE Policy Proposal 2010-02, "Allocation from the last /8".

Withdrawn Proposals

Four proposals were withdrawn in 2011:

2010-07, "Ambiguity Cleanup on IPv6 Address Space Policy for IXP"
The editorial text change proposed to clarify an ambiguous definition. It will be discussed in the Cosmetic Surgery Project, which aims to make RIPE Policy documents easier to understand without changing the meaning of the text.

2010-05, "Global Policy for IPv4 Allocation by the IANA Post Exhaustion"
It was agreed with the proposer that the lack of community feedback and the impossibility of the proposal becoming globally accepted due to recent developments in the global PDP were sufficient reasons to have it withdrawn.

2010-08, "Abuse Contact Information"
A RIPE Task Force on abuse contact information in the RIPE Database is working to solve the implementation issues pointed out by the proposal discussion. The possible policy consequences will be considered with a new proposal in the future.

2008-08, "Initial Certification policy in the RIPE NCC Service Region"
After carefully following the discussion in the Concluding Phase of the PDP, the proposer concluded that it would not be possible to achieve consensus within the RIPE community.

FINANCIAL REPORT

RIPE NCC 2011

INTRODUCTION TO THE FINANCIAL REPORT FROM THE MANAGING DIRECTOR OF THE RIPE NCC

Approaching the run-out of the free pool of IPv4 address space and set against the continued difficulties faced by many of the economies in the RIPE NCC's service region, 2011 was a strong financial year for the RIPE NCC.

The year was marked by an increase of 9% in the number of RIPE NCC members. This higher-than-expected growth in the membership and the membership fees it brought, together with on-budget expenditure, meant that the RIPE NCC ended 2011 with a substantial surplus.

In 2011, the RIPE NCC stepped up efforts to promote IPv6 and increased its investment in services such as Internet Number Resource Certification (RPKI) and RIPE Atlas. The RIPE NCC also expanded the level of support offered to its geographical regions.

In 2011, work on outreach and the enhancement of services required an increase in the number of full-time equivalents from 124 to a yearly average of 127. Overall, the enhancement of these activities, including the growth in personnel, increased the RIPE NCC's expenditure by 10% from 2010. The expansion and improvement of existing services, and the development of new services, is an area where the RIPE NCC expects to see a return on investment for its members in the future.

The year saw a high level of involvement from the RIPE NCC membership regarding financial matters. The input from members is invaluable in choosing the correct financial course for the RIPE NCC, and this is something we hope to see continue in 2012 and beyond.

Axel Pawlik

INTRODUCTION TO THE FINANCIAL REPORT FROM THE RIPE NCC EXECUTIVE BOARD TREASURER

The RIPE NCC Executive Board is elected to represent the interests of the RIPE NCC membership and to ensure that the RIPE NCC management keeps the interests of its members as its priority when handling all matters operational and financial.

The level of feedback the Executive Board received in 2011 in relation to financial matters was unprecedented, with a clear message being sent that members wished to see greater transparency on financial matters from the RIPE NCC. As always, the Executive Board remains focused on ensuring that prudence is exercised to minimise the RIPE NCC's costs.

The proposed RIPE NCC Charging Scheme 2012 was rejected by the membership at the General Meeting in November 2011. This means that the Charging Scheme 2011 will continue to be in force for the year 2012. The Executive Board has taken on board the issues raised by the membership and will involve the membership more directly in the formation of the Charging Scheme in 2012. To this end, work began in 2011 to create a Charging Scheme Task Force comprised of Executive Board members, RIPE NCC staff and representatives from the membership. This task force will work to formulate high-level principles on which a new charging scheme proposal for 2013 will be designed and proposed by the Executive Board. The rejection of the Charging Scheme 2012 and subsequent re-use of the 2011 scheme will have no direct operational or financial impact on the RIPE NCC for 2012.

The Treasury Statute was implemented in 2011 to diversify investments to minimise risk by allowing the purchase of prime government bonds and spreading investments across different banks. Closely following the trends in the financial market, the guiding principle of the Treasury Statute was changed from risk avoidance to risk minimisation in the first days of 2012. In these times of high financial uncertainty, this change offers more flexibility to the Executive Board to safeguard the reserves held by the RIPE NCC.

The Executive Board continues to welcome input on all the aspects of the RIPE NCC, including financial matters, and will continue to work with the RIPE NCC to ensure secure management of its finances for the years ahead.

Remco van Mook

STATEMENT OF INCOME AND EXPENDITURE 2011

	Actual 2011	Budget 2011	Actual 2010	Variance 2011 vs B2011		Variance 2011 vs 2010	
Income							
Service Fees	16,003	16,031	14,633	(28)	0%	1,370	9%
Sign up Fees	1,866	1,240	1,750	626	50%	116	7%
Direct Assignment User Fees	238	152	145	86	57%	93	64%
RIPE Meetings	260	250	250	10	4%	10	4%
Other Income	337	218	150	119	55%	187	125%
Total Income	**18,704**	**17,891**	**16,928**	**813**	**5%**	**1,776**	**10%**
Expenditures							
Personnel	10,196	10,281	9,150	(85)	-1%	1,046	11%
Housing	654	750	702	(96)	-13%	(48)	-7%
Office Costs	1,022	953	1,125	69	7%	(103)	-9%
Marketing/ER	607	834	608	(227)	-27%	(1)	0%
Contributions*	449	382	458	67	18%	(9)	-2%
IT Infrastructure	867	868	756	(1)	0%	111	15%
Travel	1,521	1,621	1,410	(100)	-6%	111	8%
Consultancy	888	740	684	148	20%	204	30%
Bank Charges**	116	115	114	1	1%	2	2%
Subtotal Operational Expenses	**16,320**	**16,544**	**15,007**	**(224)**	**-1%**	**1,313**	**9%**
Surplus Before Miscellaneous Costs & Depreciation	**2,384**	**1,347**	**1,921**	**1,037**	**77%**	**463**	**24%**
Bad Debts & Miscellaneous Costs	141	250	135	(109)	-44%	6	4%
Depreciation	1,701	1,481	1,419	220	15%	282	20%
Total Miscellaneous Costs & Depreciation	**1,842**	**1,731**	**1,554**	**111**	**6%**	**288**	**19%**
Total Expenses	**18,162**	**18,275**	**16,561**	**(113)**	**-1%**	**1,601**	**10%**
Surplus Before Interest Income	**542**	**(384)**	**367**	**926**		**175**	
Result on Interest Income	381	300	347	81	27%	34	10%
Surplus / Deficit	**923**	**(84)**	**714**	**1,007**		**209**	
FTEs	127	130	124	-3	-2%	3	2%

* *This cost item includes membership fees, ICANN contributions and support to industry partners.*

** *This item was called "Financial Expenses" in previous years. Because these costs do not relate to the financing of the RIPE NCC but are bank charges incurred when making and receiving payments, this item has been renamed "Bank Charges".*

NOTES TO THE RIPE NCC STATEMENT OF INCOME AND EXPENDITURE 2011

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. The balance sheet has been prepared in accordance with the historical cost convention.

The accounting principles applied by RIPE NCC are in accordance with the Dutch law and the Dutch accounting standards on recognition and measurement. The only area the Financial Report differs from these guidelines and regulations is in the disclosure of the financial figures. The comparative figures are reclassified where necessary in order to easily compare with the financial statements of this year.

The financial year 2011 resulted in a surplus of 923 kEUR, substantially above the forecast deficit of 84 kEUR. This surplus will accumulate in the RIPE NCC's Clearing House.

As a result of the increase in costs in 2011, the RIPE NCC's capital/expense ratio equated to 105% of total expenses, compared to a percentage of 110% at the end of 2010. This took the capital/expense ratio towards the target level of 100% set by the RIPE NCC's Executive Board and the RIPE NCC management. Reserves are kept to a minimum of one year's total expenses so as to ensure the financial stability and operational continuity of the RIPE NCC.

REVENUES

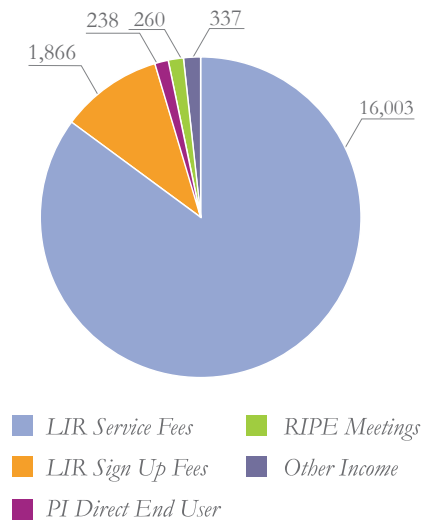
Revenues were 5% above budget and 10% above the revenue for 2010 due to a stronger membership growth in 2011 and due to the charge of an additional fee of EUR 50 per independent Internet number resource as per the Charging Scheme 2011.

In 2011, the total number of members increased to 7,795, a growth of 628 and thus a 9% increase on the 2010 figure. The net growth of 628 takes into account closed members and applicants that never became members. The total service fees were on budget and increased by 9% compared to 2010.

The total number of membership applications was 1,043. This number excludes applicants that started the application process but never completed it. By December 2011, there were 113 Direct Assignment Users, which accounts for a growth of 47% in comparison to 2010. Overall, the growth of applications is in line with 2010. As a result of this higher-than-expected influx of new members, the sign-up fee income was up 50% from the budget.

Income relates to the proceeds from the delivery of services after deducting taxes on sales. Income and expenses are attributed to the period to which they relate. Income from the two RIPE Meetings is in line with 2010 and the budget. Both meetings were well attended. Other income includes fees from the Test Traffic Measurement (TTM) service, the DNS Monitoring (DNSMON) service, (RIPE Atlas) sponsorship contributions, EU VAT reclamations from 2010 that were submitted in 2011 and a revaluation of balance sheet items such as the ICANN accrual and the investment in government bonds. In 2011, other income increased by 55% compared to the budget and 125% compared to 2010. This increase is accounted for by received contributions from industry partners such as other RIRs of 40 kEUR for the development of RPKI software and 49 kEUR for RIPE Atlas sponsorships.

Revenue Distribution (in kEUR) in 2011



EXPENDITURES

Management of expenses in 2011 resulted in a total expenditure 1% below budget, or 113 kEUR. Operational expenses were just 1% below the budgeted figure and were 9% above the total expenditure 2010.

Personnel expenses:

Personnel expenses were 1% below the budget and increased by 11% compared to 2010.
For 2011, a yearly average of 127 full-time equivalents (FTEs) were employed compared to the 130 budgeted for and the 124 employed in 2010. The number of FTEs is calculated on the basis of the actual number of hours worked.

Operational expenses:

Housing costs decreased as a result of lower than expected utilities costs and a decrease in maintenance costs.
Marketing costs are in line with 2010 and below the budget because a large part of the Research and Cooperation budget was unused in 2011.
Increased efforts in outreach resulted in higher travel costs compared to 2010 but within the budget set for 2011.
Consultancy costs were up by 29% compared to the budget due to the use of consultants for in-house developed software that is not taken as an asset, such as the development of the LIR Locator tool and the single-sign on functionality.
Bank charges are all costs related to bank transactions, such as bank and credit card charges. These increased as a result of a higher number of transactions in 2011. The average transaction cost level was the same as in previous years.

The activity costs overview is based on the cost centre administration from the RIPE NCC accounting system. These figures exclude an allocation of staff costs to these activities.

Activities	Actual 2011	Budget 2011	Actual 2010	Variance 2011 vs B2011		Variance 2011 vs 2010	
RIPE Meetings	780	857	948	(77)	-9%	(168)	-18%
Training Courses	300	383	286	(83)	-22%	14	5%
Regional Meetings	438	263	257	175	67%	181	70%

As in previous years, two RIPE Meetings were held in 2011, one in Amsterdam, the Netherlands and one in Vienna, Austria. RIPE Meeting expenses were under budget by 9% and 18% below the level in 2010 due to lower overall costs for both meetings.

Efficient scheduling of RIPE NCC Training Courses led to an increase in the number of people trained. Over 1,950 people were trained in 2011 compared to approximately 1,700 in 2010. The costs were below budget by 22%.

Five regional meetings were supported: two ENOG Meetings in Moscow, Russia; one RIPE NCC Regional Meeting in Dubrovnik, Croatia; and two MENOG Meetings – one in Dahram, Saudi Arabia and one in Muscat, Oman.

Miscellaneous expenses consist of bad debts that reflect the low number of membership closures. Bad debts were higher than in 2010 by 4% but far below the expected budgeted amount of 200 kEUR. Other miscellaneous costs amounted to zero although the Budget 2011 contained 50 kEUR for Unforeseen items.

Depreciation expenses increased because of software development costs taken as an asset at the end of 2010. These items were not anticipated in the Budget 2011 because this was finalised before these items were taken as an asset. The purchase value of the assets decreased by 20% compared to 2010 to 1,604 kEUR.

The result on interest income increased. It was 27% above budget and 10% above 2010. The average interest received was 1.7% over the cash reserves.

BALANCE SHEET

in kEUR ASSETS	2011	2010
FIXED ASSETS		
Hardware & Software	1,148	1,174
Infrastructure	215	110
Office Equipment	77	62
Total Fixed Assets	**1,440**	**1,346**
Intangible Fixed Assets		
Software Development	1,465	1,656
	1,465	**1,656**
Financial Assets		
Government Bonds	1,990	
	1,990	
CURRENT ASSETS		
Accounts Receivable	10,595	5,692
VAT	2	(19)
Miscellaneous Receivables	1,154	1,112
Total Current Assets	**11,751**	**6,785**
Cash On Hand	**17,625**	**22,935**
Total ASSETS	**34,271**	**32,722**
LIABILITIES		
Capital		
Reserves	477	477
Clearing House	17,646	16,932
Surplus	923	714
Total Capital	**19,046**	**18,123**
CURRENT LIABILITIES		
Creditors	759	1,018
Wage Taxes & Social Securities	421	384
Unearned Revenues	12,952	12,049
Miscellaneous Payables	1,093	1,148
Total Current Liabilities	**15,225**	**14,599**
Total LIABILITIES	**34,271**	**32,722**

NOTES TO THE BALANCE SHEET AS PER 31 DECEMBER 2011

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. Historic costs have been used throughout unless otherwise stated. In general, the balance sheet reflects a growth in membership and a stabilisation of investments in comparison to 2010.

In 2011, the RIPE NCC invested part of its cash on hand in government bonds, trying to achieve a further solidity of reserves while achieving a safe return on the investment. As the invoices for 2012 were only sent out in mid-December 2011, the accounts receivable shows a considerable increase compared to 2010. This was due to the late date in the year for the General Meeting and the rejection of the proposed Charging Scheme for 2012.

FIXED ASSETS AND INTANGIBLE FIXED ASSETS

Assets are valued at historical costs and are depreciated on a straight-line basis, starting from the month after acquisition.

Fixed assets are depreciated for the actual period of economic use. Hardware & Software consists of hardware and purchased activated software. Hardware is written off over three years and software is written off over two years. Infrastructure is written off after three years and office equipment after five years. All items under EUR 500 are expensed, as is required by the tax code.

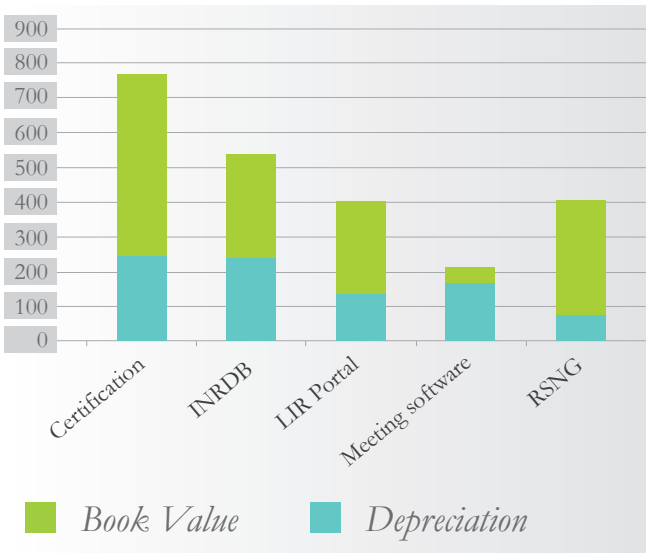
Intangible fixed assets includes only in-house software development. Software development costs are capitalised insofar as they are incurred in respect of potentially valuable projects and are stated at costs. These costs comprise the costs of direct labour as well as outsourced consultancy costs. Upon termination of the development phase, the capitalised costs are written off over their expected useful life. This is set at three years.

Fixed Assets (in kEUR)	Hardware & Software	Infrastructure	Office Equipment	Software Development
Book Value 1 January 2011	1,174	110	62	1,656
Purchase Costs	765	184	37	618
Depreciation	791	79	22	809
Book Value 31 December 2011	1,148	215	77	1,465

The Capital Expenditure for 2011 was 1,604 kEUR. This is a decrease of 20% compared to 2010 and 37% compare to the budget set for 2011. This is mainly a result of the lower than expected software development capitalisation.

In 2011, the expenses, personnel and consultancy costs associated with Internet Number Resource Certification (RPKI) and the further development of the internal registration software (RSNG) were taken as an intangible fixed asset for a total amount of 617 kEUR. In 2011, there was no addition for consultancy costs for projects that are currently works in progress.

The graph below shows the intangible assets with a book value that the RIPE NCC has depreciated per 31 Desember 2011.



Note: The Internet Number Resource Database (INRDB) and the Resource Services Next Generation (RSNG) tool are internal RIPE NCC software.

FINANCIAL ASSETS

The government bonds stated under the financial assets (listed and not listed) are valued (per fund) at fair value, with the changes in fair value recognised directly in the statement of income and expenditure.

In 2011, the RIPE NCC Management implemented the Treasury Statute that documents the stable management of its financial reserves. In October 2011, Dutch and German government bonds, with an end date in 2014, were purchased for a total value of EUR 2 million. The overall combined performance of the bonds over 2011 was 101%.

CURRENT ASSETS

Accounts Receivable

Accounts receivable consists of those invoices outstanding at 31 December 2011. A late invoice date in December 2011 accounts for the high amount of accounts receivable compared to 2010. The invoices for 2012 were only 16 days old at the end of 2011, whereas the invoices for 2011 were over 30 days old at the end of 2010.

Other items included under Accounts receivable are:

Other debtors accounted for 29 kEUR at 31 December 2011. This amount is due to a late invoicing of Test Traffic Measurements (TTM) invoices for 2011. Provision bad debts, which accounts for 1% of the total Accounts receivable. Those payments that could not be identified and attributed to any specific member. At year-end, this amounted to 47 kEUR, which is 47% below the level in 2010.

Because the invoices pertaining to 2012 were sent in December 2011, the amount of VAT receivable from the tax authorities is very low.

Miscellaneous receivable increased slightly compared to 2010. Items listed under this section are:

Prepayments for office rent, equipment, RIPE Meetings, IT service contracts, pensions, health and contributions for 2012. The increase of prepayments is attributable to contracted IT services and licenses for 2012, as well as an increase in pension and health contributions. The RIPE NCC has a pension system of defined contribution with a pensionable age of 65 years, in accordance with Dutch fiscal requirements.

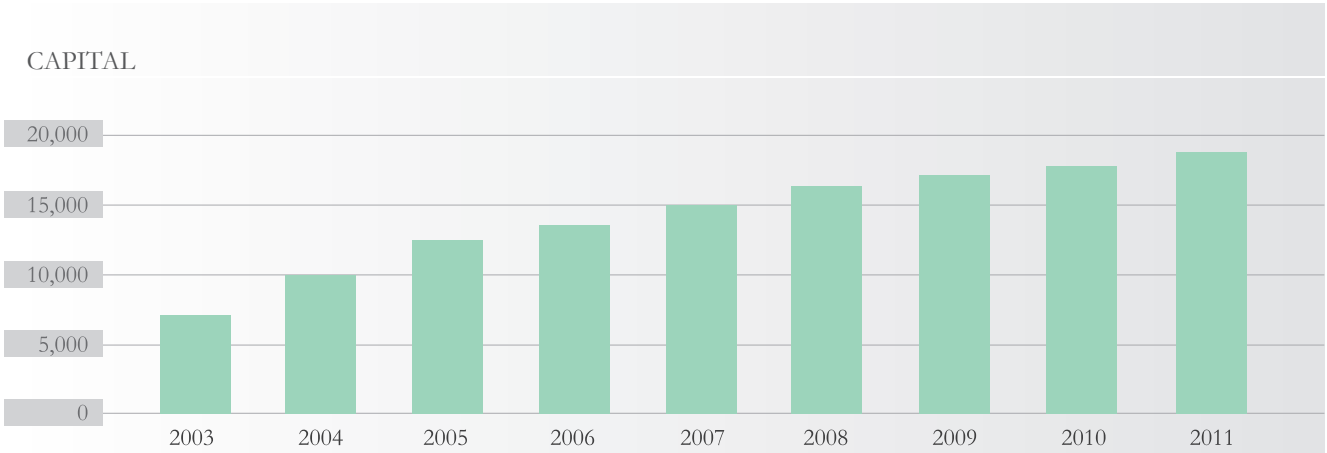
Interest receivable, which by the end of 2011 was 6% above the level of 2010.

Other receivables include credit card payments to be received, payments in transit and a small inventory for the sale of TTM equipment.

Miscellaneous Receivable (in kEUR)	31 / 12 / 2011	31 / 12 / 2010
Prepayments	681	578
Interest Receivable	232	219
Other Receivables	241	315
Total Miscellaneous Receivable	1,154	1,112

CAPITAL

The RIPE NCC has a tax-free ruling with the Dutch tax authorities, the so-called "Clearing House". A reserve of up to three times the total amount of service fees received from members in a year can be accumulated without paying corporation taxes. Excess amounts have to be redistributed to RIPE NCC members. At the end of 2011, the Capital had increased to 19,046 kEUR. This represents a decrease to 1.05 times the service fee level for the pertaining year.



CURRENT LIABILITIES

The creditor level at the end of 2011 decreased compared to 2010 because there were fewer large invoices outstanding. Additionally, a restatement of 19 kEUR was made from creditors to Accounts receivable for outstanding credit amounts with suppliers at 31 December 2011.

Wage Taxes and Social Securities

The increase in wage taxes and social securities at year-end 2011 versus year-end 2010 is due to a higher number of staff employed at 31 December 2011.

Miscellaneous Payables

The Miscellaneous payables include the accrued holiday allowance and the accrued vacation days for employees. This amount is based on the number of outstanding vacation days at 31 December 2011 valued on the December 2011 salary. The total value of the accrued vacation days is 346 kEUR.

At year-end 2011, six months of the contribution for the ICANN fiscal year 2011/2012 were outstanding. Other payables are other accruals and receivable discounts on rental agreements.

Items Not Shown in Balance Sheet

The RIPE NCC rents office space in two connected buildings and has separate rental agreements for these. These rental agreements were re-negotiated in 2008 and have been extended until December 2014. For these rental agreements, two bank guarantees have been issued for an amount of 144 kEUR. The amount due in rent for both rental agreements will total 569 kEUR in 2012. The total obligation for these rental agreements amounts to 1,566 kEUR over the remaining contract period.

At 31 December 2011, the RIPE NCC had no financial liability or obligation towards any industry partner that is not reflected in the Balance Sheet. There was no capital or financial interest in any other organisation that had a financial impact on this financial statement.

CASH FLOW

in kEUR	Y2011	Y2010
Begin Cash Balance 1 January 2011	22,935	18,803
Cash Inflow		
New LIR	2,375	2,351
LIR Service Fees	11,812	17,404
TTM/DNSMON	230	223
RIPE Meetings	278	236
Interest Received	368	408
Other	564	510
Total Inflow	**15,627**	**21,132**
Cash Outflow		
Salary	5,001	4,763
Wage Tax and Social Security	3,382	3,057
Pension and health	1,056	927
RIPE Meetings and Regional Meetings	346	548
ICANN	187	234
Creditors	8,975	7,471
Total Outflow	**18,947**	**17,000**
Total Cash Inflow Balance	**(3,320)**	**(4,132)**
Total Balance Cash and Bonds	**19,615**	**22,935**
Cash Balance 31 December	17,625	22,935
Bond Balance 31 December	1,990	

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation.

The cash inflow reflects the fact that payments for the invoices of 2012 are coming in later than in the previous year. This has decreased the cash inflow from service fees by more than EUR 5 million. The cash outflow increased in line with the growth of the cost base in 2011. The RIPE NCC's cash flow decreased over 2011 and at year-end the cash amounted to 19,615 kEUR.

The remaining cash was held in several deposits spread among three different banks, as part of a prudent and conservative management of the reserves held by the RIPE NCC and in line with the Treasury Statute.

INDEPENDENT AUDITOR'S REPORT

To: Réseaux IP Européens Network Coordination Centre

We have audited the accompanying Financial report 2011 as set out on pages 45 to 54 of Réseaux IP Européens Network Coordination Centre, Amsterdam, which comprise the statement of income and expenditure for the year 2011, the balance sheet as at 31 December 2011 and the notes, comprising a summary of the accounting policies.

Management's responsibility
Management is responsible for the preparation of the Financial report in accordance with the accounting policies selected and disclosed by the entity, as set out in the notes of the Financial report. Furthermore, management is responsible for such internal control as it determines is necessary to enable the preparation of the Financial report that is free from material misstatement, whether due to fraud or error.

Auditor's responsibility
Our responsibility is to express an opinion on the Financial report based on our audit. We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. This requires that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Financial report. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the Financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the Financial report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the Financial report is prepared, in all material respects, in accordance with the accounting policies selected and disclosed by the entity, as set out in the notes of the Financial report.

Wognum, 16 March 2012

BDO Audit & Assurance B.V.
on its behalf,

sgd
M.E. Jager RA

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