RIPE NCC Activities, Expenditures, and Charging Scheme 2002

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Process

This document contains the planned activities for the RIPE NCC and the associated expenditures for the year 2002, as well as the charging scheme to ensure the necessary revenues. The RIPE NCC, based on input from RIPE and users of RIPE NCC services, has drafted the document. The Executive Board of the RIPE NCC presents it to the RIPE NCC members. The members approve the final version at the Annual General Meeting. No changes are made to the document after its approval.

The text in this document does not affect or change any policies or procedures defined in any other published RIPE documents.

Executive Summary

The total budget for the 2002 planned activities is kEUR 9,593. The increase of 21% in the total expenditure is due primarily to an increase in the Registration Services workload, additional projects, and the required increase in personnel to ensure a high quality of service. Due to the renewal of rental leases, the cost of housing also went up for 2002. The activities directly pertaining to members show increases in spending, ranging from 24% to 89%.

Administrative costs show a decrease of 9%. Fees for Local Internet Registries (LIRs) will be reduced by approximately 14% to EUR 1,800, EUR 2,500 and EUR 3,400 for Small, Medium, and Large LIRs respectively. Total revenues are expected at kEUR 9,622.

An operating plan must be able to be adapted to changing circumstances. Any amendments to the RIPE NCC Activities, Expenditures, and Charging Scheme 2002 will be made within the formal structure of the RIPE NCC Association and therefore require the approval of the RIPE NCC Executive Board. No fee adjustment will be made in the course of the year.

Growth Plan

Following an analysis of the development of the growth over 2001, the increase of LIRs is estimated at 540 for 2002 or approximately 1.5 members per calendar day. This is an increase of 0.25 members per calendar day in relation to the budgeted increase of 1.25 members/day in the 2001 budget.

The projections for the remainder of 2001 and the year 2002 are as follows:

.	Actual			Projected	
LIRs	1998	1999	2000	2001	2002
Small	935	1,257	1,978	2,620	3,160
Medium	253	346	459	598	598
Large	75	93	130	159	159
Total	1,263	1,696	2,567	3,377	3,917

The growth in the number of LIRs is but one indicator of the growth and workload. Estimates for the increase in workload for Registration Services are based on this, as well as on the number of tickets handled by the Hostmasters. It is expected that the Hostmasters will be handling 30,000 tickets in 2002 (25,000 tickets estimated for 2001), based on past statistics and a linear extrapolation from them.

Budget

The budgeted costs for the various activities for 2002 (with 2001 for comparative purposes) are shown below in kEUR.

Activity Area	**2001**	**%**	**2002**	**%**	**Change**	**%**
Registration	3,539	44.7%	4,367	45.5%	829	23.4%
Co-ordination	2,225	28.1%	2,419	25.2%	194	8.7%
Test Traffic Measurements	459	5.8%	868	9.1%	409	89.2%
New Activities	637	8.0%	976	10.2%	339	53.3%
Administration	1,064	13.4%	963	10.0%	-101	-9.5%
Total	7,924	100%	9,593	100%	1,669	21.1%

The increase in the budget for 2002 is 21.1%, including a special reserve of EUR 200,000 or 2.1% of total costs for various contingencies. Because this reserve touches on several of the activity areas, it has been distributed among them based on the Full Time Equivalents (FTEs) required by each activity.

Total Income 2002

The projected total income for the year 2002 (in kEUR) is derived from the various sources as follows:

	New LIRs	
540	**Sign up Fees**	1,134
540	**Small**	486

	Existing LIRs	
2,620	**Small**	4,716
598	**Medium**	1,495
159	**Large**	541
Billing Charge		81
Total Fee Income		8,453
	Other Income	
	RIPE Meeting	473
	TTM Service Fees	375
	Interest	322
Total Income		9,623

These revenues will provide a surplus of approximately EUR 30,000 or just over 0.3% of the total budgeted cost of the activities.

Membership Services

Registration Activities

Registration activities represent operations relating to the RIPE NCC role as a Regional Internet Registry (RIR) for its service region. They include the handling of requests for assignment and allocation of IP address space and AS numbers, management of reverse domain name space associated with this address space, and the auditing and quality control necessary to ensure fair and expedient processing of requests.

Also included are training of Local Internet Registries, preparation and writing of documentation related to Internet registration policies and procedures, and specific activities that guarantee a proper and appropriate start for new LIRs. Services provided in this area are available only to members that contribute to the funding of the RIPE NCC.

The focus in Registration Services (RS) in 2002 will be on coping with the continued rapid growth and planning for future challenges and workload. A firm decision has been made to increase the current staffing of Hostmasters to secure full control of the workload. This will enable the RS to cope with the high peaks of the workload, in addition to the normal workload in the Registration Services. These resources will be invested in stabilising the services provided and additional efforts will be devoted to improve efficiency and quality. With this aim, the RIPE NCC will focus on documentation, education of newer members, and improving internal processes and procedures.

With past and future staffing increases in the Registration Services, it is recognised that higher focus on the management of the department will be required. It is vital to continue the pro-active development of address policies as this has a significant influence on the operations of both the RS and the membership.

The RIPE NCC has therefore split the Registration Services manager function, which has been replaced with the more specific 'Registration Services Operations Manager' function and the 'Internet Address Policy Manager' function. With these two new functions in place, the RIPE NCC is thus injecting more resources and focus on both these areas. The results of this change are expected to show in the year 2002.

As the LIR Training Course has proven to be an effective method for quickly educating newer members, it will be increased from the current level of 50 courses per year. Additions to the pool of trainers will be considered and the course material will be further refined.

Based on recent increase in demand in IPv6, the interest in IPv6 is expected to continue to grow at a stable rate. IPv6 address space registration will become increasingly important. The RIPE NCC continues to gain more experience with IPv6 and Registration Services is becoming progressively skilled in handling requests for IPv6 address space. The RIPE NCC will continue its close co-ordination work with the other RIRs in the evaluation of IPv6 requests, and the development of IPv6 address assignment and allocation policies and procedures. The RIPE NCC will invest further efforts in gaining operational experience with IPv6 to increase its overall understanding.

Developments in the area of WAP, GPRS, UMTS, 3G, and other technologies related to the Internet and the services provided by the RIPE NCC will be followed carefully, keeping abreast with relevant technologies. It will also continue its current co-operation with other relevant Internet organisations, ensuring a constant injection of technical knowledge and awareness in the Registration Services.

Liaison activities with other existing RIRs will further intensify, resulting in enhanced co-ordination in matters related to Internet Address and ASN policies. Current support to emerging RIRs, particularly AfriNIC, will also continue in the coming year.

Test Traffic Measurements

The goal of the Test Traffic Measurements (TTM) is to conduct independent measurements of performance related quantities of the Internet and in particular between the networks operated by the membership. Examples of such quantities are the delay, loss, or routing vector between two points. To measure these quantities, the RIPE NCC installs dedicated measurement stations (so-called "test-boxes"), operates them, analyses the data, and reports the results to the participants.

Since July 2001, sites participating in the TTM are charged an (pro-rated) annual service fee of EUR 3,000 for the first test-box and EUR 1,500 each for the second and additional test-boxes. They also pay for the costs of the hardware installed at their site. The resources budgeted for 2002 provide the means to:

- Continue to run and expand the network;

- Offer services to the sites already participating in the project;

- Pursue the development of new services based on the Test Traffic data;

- Offer user training on how to use the TTM data in daily operations; and

- Develop additional measurements using the test-boxes.

This activity represents about 16.6% of the total Membership Services budget.

Additional information on Test Traffic Measurements can be found at:
http://www.ripe.net/test-traffic.

Co-ordination Activities

The common purpose of these diverse activities is to support the coherent operation of the Internet in the RIPE region. The primary activity is the provision of access to the RIPE Database, providing information about address space, routing policies and reverse DNS information together with the appropriate contact points.

Development and publication of RIPE Database software, provision of information services for ISPs and the public via the Internet fall under co-ordination activities.

Operational co-ordination also comes under this category as does the production and publication of software tools for such efforts.

Other important co-ordination activities include the maintenance of the root name server that the RIPE NCC operates.

The services performed in this area, to be effective, must be constantly accessible to the Internet community. Whenever special support is needed, the RIPE NCC members receive priority over other users.

Another key co-ordination activity is the organisation of the three RIPE Meetings every year. These meetings have extended their traditional discussions and now also play an important role in the work of the ICANN Address Supporting Organisation. Although the fees charged cover direct costs such as venue and equipment rental, meals, etc., of the RIPE meetings, the RIPE NCC covers all the indirect costs. These include the logistical support, registration, documentation, minute taking, the maintenance of the RIPE web site, etc. These amount to approximately 2.5 Full Time Equivalents.

Legitimacy and representation of the RIPE NCC continue to be an important focus for 2002. The Activity Plan for 2002 foresees more concentration on new technologies and industries that could have an impact on IP address usage rate and the Internet Registry System. External representation of the RIPE NCC and the RIPE community to third party organisations (new industries, governments, the European Parliament, ICANN, etc.) is also a notable co-ordination activity.

During 2002, the RIPE NCC will ensure continued support to activities related to the Routing Registry. These include the extension of activities related to the Routing Registry Consistency Check (RRCC) project and the responsibility for the support and development

of the RAToolset.

During 2002, work will continue to increase support for IPv6 and multicast applications in the IRR. Additionally, security aspects of interaction with the RIPE Database will be an important item.

Efforts will be continued to provide proper data maintenance, data management, and data analysis tools, including regular updates on the status of the data in the database as well as general help with good data maintenance practices. Database and related software will be actively maintained and developed to ensure that new features are available to meet user needs.

During 2002, the RIPE NCC will spend additional efforts in increasing flexibility and security in its interaction with the membership. The aim is to provide a more user-friendly and secure means of interaction for LIRs in their applications for Internet resources and the management of information residing at the RIPE NCC servers (e.g., the RIPE Database).

New Activities

New Activities are either entirely unforeseen or have started recently and are not yet at the stage where they can be developed as regular services. Due to the impartial and neutral position of the RIPE NCC, it can play an important role in facilitating new projects and services for its members as well as for the RIPE community.

The impetus for New Activities comes from various sources: the RIPE NCC itself, individuals and/or organisations within the RIPE community, and the appropriate RIPE working groups.

If the activities require long-term support, they may become a regular RIPE NCC activity subsequently funded by all members. If the activities are short term but substantial or continued support by all members is not appropriate, they may be continued as special projects for which funding is sought separately among interested parties.

These activities fall under the guidance of the various RIPE working groups with active participation of the RIPE NCC membership and the Internet community.

In 2001, Test Traffic Measurements became a regular membership service. It is therefore described in another section. There are two new projects already underway, which will be further developed in 2002.

Deployment of Internet Security Infrastructure (DISI)

Security Deployment is a new activity started in late 2000. As the Internet is used for more and more critical applications, security becomes increasingly important. A lot of security technology has recently been developed and now needs to be deployed throughout the Internet Infrastructure [RFC 2828]. Prominent examples are DNSSec [RFC 2535] and IPSec [RFC 2401].

The DISI project will support the RIPE community in deploying these technologies, specifically those technologies that need to be deployed in the Internet Infrastructure itself, rather than at the end sites only. This project initially focuses on DNSsec and will later be expanded to other relevant technologies.

As from the RIPE 40 Meeting, the RIPE NCC will start to offer courses on securing a zone using DNSsec. Information and experience will also be gathered by the deployment of the technologies within the RIPE NCC. The information will be shared with the RIPE community in additional workshops and white papers.

During the start-up phase of this project, it has become clear that a lot of work still needs to be done on the technology and the implementations before DNSSEC can be deployed in a large scale production environment. The RIPE NCC has therefore set up collaborations with NLnet-labs, Nominum, and other parties interested in these technologies to help improve the deploy-ability of DNSSEC. This is also pursued by active involvement in the relevant IETF working groups. DISI will continue in 2002.

Routing Information Service (RIS)

The Routing Information Service collects BGP routing information at several major exchange points in near real time and stores it in a database. An interface similar to a "looking glass" then provides both multiple views and information about specific times in the past. This is a new and unique tool for ISP operations. Operators no longer have to search for specific looking glass services covering the area of interest. In addition, they can query for data at the specific time of any problems.

The RIS database is also useful to the RIPE NCC itself as it provides information about how resources allocated by the RIPE NCC are actually used on the Internet over an extended period. During 2002, RIS will move from a new activity to a regular part of the routing co-ordination services available to the Internet at large.

Administration Activities

This area covers all general administrative overheads (building rental and refurbishment, computer infrastructure, personnel, office supplies, etc.) that cannot be clearly attributed to a specific activity in one of the other areas.

Unforeseen Activities

As always, the RIPE NCC will be available to start new activities as required by the membership and the RIPE community. We will continue to actively pursue developments and spot new needs as the Internet develops. We will continue to actively participate in the appropriate forums such as IETF and NANOG.

Charging Scheme

The charges for 2002 are fixed annual charges and are based on the size category of an LIR.

A minimum ‘size category will be determined based on address space allocations held by the LIR on 1 November 2001. The categories will be published and LIRs changing in billing category size will be notified by e-mail.

New Local Internet Registries established during 2002 will be charged a sign-up fee, plus 25% of the annual fee for each quarter that they are members. Their initial minimum size category will be SMALL. Enterprise LIRs are classed as SMALL for charging purposes.

The proposed charges for 2002 are as follows (in EUR):

Annual Charge	**2002**	**2001**	**2000**	**1999**	**1998**	**1997**
SMALL	1,800	2,100	2,400	2,650	2,450	2,200
MEDIUM	2,500	2,950	3,350	3,700	3,400	3,000
LARGE	3,400	3,900	4,400	4,900	4,500	4,000
Sign Up	2,100	2,100	2,100	2,100	2,000	1,300

The proposed fees for 2002 are approximately 14 % lower than those of 2001, while the cost of the associated activities are approximately 21% higher. This is due to the increased number of LIRs sharing the costs.

The charging model algorithm (see RIPE document, "Alternative Models for RIPE NCC Revenue and Charging 1997" for more details) has been used to determine the minimum size category for each LIR, based on the address space allocations held by the LIR.

The projected distribution of small/medium/large size members in percent for the year 2002, as compared to July 2001, is as follows:

Category	**2002**	**July 2001**
SMALL	79.8%	77.6%
MEDIUM	15.7%	17.7%
LARGE	4.5%	4.7%

The expected changes of LIRs between the three size categories are shown in detail below:

From To:	**SMALL**	**MEDIUM**	**LARGE**
SMALL	2,125	145	9
MEDIUM	92	330	28
LARGE	2	31	96

The data for these tables can be found at: ftp://ftp.ripe.net/ripe/local-ir/category-Jul-2001 and at ftp://ftp.ripe.net/ripe/local-ir/allocs-Jul-2001

The minimum size category for each LIR for charging will be determined based on the address space allocations held by that LIR on 1 November 2001. The minimum size category for all LIRs based on allocations received before 1 November 2001 will be available at ftp://ftp.ripe.net/ripe/local-ir/category-Nov-2001 The allocation data this is based on, as well as current registry size, will be avaiable at ftp://ftp.ripe.net/ripe/local-ir/allocs-Nov-2001. All LIRs should check this data and report any inconsistencies to: <billing@ripe.net>.

Challenges

Managing the growth while remaining stable and professional in the delivery of essential services to the membership remains the main challenge that the RIPE NCC faces. The RIPE NCC will continue developing current and new activities. It will keep abreast of leading edge developments and services while maintaining enough flexibility to be able to react promptly to the continually changing environment and embrace new technologies and industry players.

The success of this plan lies in finding and keeping the people who work to make it happen. The RIPE NCC will have to continue to offer an attractive and challenging work environment.

APPENDIX

M - Membership Services

Activities included in Membership Services relate directly to services provided to the RIPE NCC membership. Services performed in this area are only accessible to established members of the RIPE NCC.

M1 Regional Internet Registry

In its role as a Regional Internet Registry, the RIPE NCC provides allocation and registration services to LIRs in its service region that covers Europe, the Middle East, Central Asia, and African countries north of the equator. The overall goal of this activity is to provide fair, impartial, and stable distribution of Internet numbers (IPv4, IPv6, and AS) in its service region. The specific goals for the distribution of address space are uniqueness of addresses, conservation of IPv4 address space, procedure and policy definition for IPv6 address space, aggregation of routing information, and registration of network management information.

In correlation with the increase in the RIPE NCC membership, an associated growth is experienced in the number of requests received from members. The workload on Registration Services proportionately increases with the steady, sometimes rapid, growth in membership. With the aim of balancing human resources and workload, the staffing level of Registration Services will further increase in 2002.

To minimise clerical work for RIPE NCC Hostmasters and provide fast feedback to LIRs, a big effort is being made to automate the process of making and processing requests. Supplementary attempts are made to develop and improve the request forms.

Training courses for members is an additional activity. Looking at the rate of growth in the RIPE NCC membership and seeing the constructive outcome of these courses, it is recognised that the number of training courses provided by Registration Services should be increased. More resources to cope with this extra workload will be made available.

In 2002, both work flow and quality management will have to keep step with the expected growth and ensure that peaks in the load do not create unacceptable delays or a reduction in quality. The impartiality and neutrality of the RIPE NCC has to be maintained at all times. The basic procedures will change to focus on the content of address space requests and ease the process of providing additional information. Common to all of registration activities is liaison with the RIPE Local IR Working Group (LIR-WG) and with the other RIRs about the general application of procedures and policies.

M1.1 Distribution of IPv4 Address Space

Description:

The RIPE NCC allocates IPv4 address space to the RIPE NCC members for further address assignments to their own and End Users' networks. Special attention is given to these allocation requests. Tools to support the allocation process and ensure the best aggregation possible will be enhanced.

IPv4 address space assignments above a threshold size require approval from the RIPE NCC. The RIPE NCC evaluates these assignment requests. Members can ask a second opinion about assignments even when it is not required. In addition the RIPE NCC gives recommendations and guidelines for future requests.

With regards to address allocations and assignments, the RIPE NCC provides special support for new members and beneficial guidance to established members.

Goal:

The process of allocating and assigning address space helps to ensure a fair distribution of IPv4 addresses. It also supports the efficient use of address space to conserve the remaining IPv4 address space and to aggregate routing information.

Approval of IPv4 address space assignments ensures homogeneous application of policies and assignment criteria by all RIPE NCC members (LIRs) and helps them become familiar with request evaluation.

Assistance to new and established LIRs helps to process successfully their address space

requests and to provide a good understanding of policies and procedures for further requests. This support also promotes a good working relationship between the RIPE NCC and its members, and ensures that the members are able to provide the same support to their customers.

Related Activities:

RIPE Working Group Advising:

RIPE Local IR WG

M1.2 Distribution of IPv6 Address Space

Description:

The RIPE NCC allocates IPv6 address space to its members. This includes evaluating and auditing of assignments made from IPv6 allocations. Tools to support the allocation process and to ensure the best aggregation possible will be enhanced.

Goal:

This activity helps to ensure a fair distribution of IPv6 address space and encourages the use of IPv6. It also supports the aggregation of IPv6 routing information.

RIPE Working Group Advising:

RIPE Local IR WG, RIPE IPv6 WG

M1.3 Autonomous System Number (ASN) Assignments

Description

The RIPE NCC assigns AS numbers according to global and local policies. It registers these numbers and the associated routing information. The request form, supporting documentation and training materials will be updated.

Goal:

This activity ensures uniqueness of AS numbers and helps collecting data for the Routing Registry. It also helps to prevent unnecessary increases in the number of autonomous systems that are visible in global Internet Routing.

RIPE Working Group Advising:

RIPE Local IR WG, RIPE Routing WG, RIPE Database WG

M1.4 Reverse Delegation

Description

The RIPE NCC delegates reverse DNS zones for the address ranges allocated or assigned via the RIPE NCC. To provide this service, the RIPE NCC will provide a reliable secondary nameserver and work to avoid pollution of the DNS in the zones delegated to the RIPE NCC. Therefore, the RIPE NCC will check all zones under its responsibility as to proper set-up and functioning. Proactive checking of already delegated zones is an important goal.

Goal:

This activity supports the proper address-to-name mapping for addresses allocated to the RIPE NCC.

RIPE Working Group Advising:

RIPE Local IR WG, RIPE DNS WG

M1.5 Consistency and Auditing

Description:

The RIPE NCC actively checks the quality and validity of Internet resource registry data, including the production of statistics on address space usage. To ensure fair address space distribution, the RIPE NCC regularly checks that assignments are applied uniformly. This activity is separated from the other registration activities as it is defined and carried out independently from the day-to-day processing of requests. Consistency checking and auditing are performed within other activities. Observations are reported back to the RIPE Local IR Working Group for further investigations and improvement of the procedures.

Goal:

This activity promotes a consistent and fair application of assignment criteria relating to the conservation of address space and aggregation of routing information. This activity assists in identifying parts of the procedure that cause problems.

Related Activities:

All registration activities

RIPE Working Group Advising:

RIPE Local IR WG

M2 Initial Support for New LIRs

The initial support for newly established LIRs is provided in addition to the other registration services. It is embedded as part of the process to establish a new LIR. During this phase, additional clarification and explanation is involved to familiarise the new and potential LIRs with all procedures necessary to operate an Internet registry.

M2.1 LIR Set-up

Description:

The RIPE NCC provides information to potential LIRs and gives initial support and help to LIRs during their set-up phase. Information and support is also extended to potential LIRs.

Goal:

This activity supports new LIRs during their set-up phase to introduce tools, procedures and guidelines. It also gives potential LIRs enough information to make an informed choice as to whether or not they become an LIR.

RIPE Working Group Advising:

RIPE Local IR WG

M2.2 Training Courses

Description:

The RIPE NCC will further develop and continue to deliver Training Courses for LIRs, both new and existing. The course material includes IP address assignment and allocation procedures and policies, delegation of reverse domains, and usage of the RIPE Database. Additional, more specific, courses will also be developed.

Goal:

The goal of this activity is to familiarise the new LIRs with procedures and policies and keep established LIRs up-to-date with new guidelines and developments. This facilitates smooth operations between the RIPE NCC and the LIRs. With the consistent application of policies the RIPE NCC can ensure fair distribution of address space among the community.

RIPE Working Group Advising:

RIPE Local IR WG

M3 Liaison and Co-ordination

Description:

To carry out activities for its members, the RIPE NCC acts as a liaison and co-ordinates with a variety of organisations and tracks the activities of others. Examples of such organisations are the IANA, ICANN, IETF, RIPE, ARIN, and APNIC. It is often difficult to attribute liaison and co-ordination resources to specific activities and it is therefore an activity in its own right.

Goal:

To maintain the necessary relationship with other organisations related to the operations of the RIPE NCC. Budgeting: Costs for this activity are split evenly between the registration and co-ordination activity budget lines.

M4 Test Traffic Measurements (TTM)

Description:

1. Continue to run a network of test-boxes. The RIPE NCC will continue to operate a network of test-boxes as well as a service where the host sites can retrieve the data produced by their text-boxes. To improve the quality of the data and to detect problems with the test-boxes, Data Quality Monitoring (DQM) will be done on a regular basis.

2. Expanding the measurement network.

The RIPE NCC will continue to promote the TTM service and install test-boxes at interested sites. The promotion of the TTM service that was started at RIPE 38 will be continued and expanded.

More focus will be put on communication with current and future test-box hosts to better understand their requirements for performance measurements and their needs for products based on the data.

Several sites have expressed interest in other versions of the test-box hardware and these will be available late 2001 or early 2002.

Finally, the RIPE NCC will investigate the possibility to install test-boxes at topologically interesting sites on the Internet such as exchange points and popular web sites.

3. Run standard analysis. A standard analysis package will be run on the data every day. This package will continue to be expanded based on user feedback.

At RIPE 33, a method was proposed to detect unusual network conditions and warn operators about them. The RIPE NCC will continue to offer this service and, together with network operators, investigate how these warnings can be interfaced with existing network

monitoring tools.

On the latest model test-boxes, a web-based user interface will be installed. This UI will allow the owner of the box to access a real-time, though preliminary, analysis of the data collected with the test-box.

4. Continue development work on the project. Development work on the project will continue in several different areas:

a. Based on the summary data, a model is being developed to describe the data over long time intervals and to look for trends in the data over time. This can be used as a planning tool for ISPs.

b. Metrics for throughput measurements are currently being studied within the framework of the IETF IPPM Working Group. It is foreseen that one of these metrics will be implemented on the test-boxes.

c. Other new metrics will be studied and, if feasible, implemented on the test-boxes.

d. Development of interfaces to other applications such as Traffic Engineering tools.

e. Implementation of other requests from current and future test-box hosts.

f. Any developments in the Internet, related to the Test Traffic Measurements, will be energetically followed and responded to.

5. User training. The RIPE NCC will investigate how end-to-end performance data can be used in day-to-day ISP operations and provide this information to its membership either as courses or white papers.

RIPE Working Group Advising:

RIPE Test Traffic WG

M5 Membership - RIPE NCC Interaction Facilities

Description:

The goal of this activity is to develop and improve flexible and convenient ways for LIRs and users in general to interact with the RIPE NCC's systems. Particular attention will be dedicated to the security aspects of such interactions to ensure privacy and authentication wherever needed.

Goal:

This activity aims at allowing access to the LIRs to securely access and eventually update some of the information the RIPE NCC keeps in its internal services regarding the LIR. It also includes front ends for other RIPE NCC systems such as the RIPE Database. During 2002, this activity will concentrate on the development and discussion of prototypes that address the user's needs.

C - Co-ordination Activities

The activities performed in this area, to be effective, must be accessible to the users of the Internet and the general public. Their common purpose is to support the coherent operation of the Internet in the RIPE NCC area of operation.

C1 RIPE Database Maintenance and Development

Description:

The RIPE Database is the core software on which the Regional IP Registry and the RIPE Routing Registry are based. Reliability and rich functionality of the RIPE Database are essential for the RIPE NCC, the LIRs in the RIPE NCC service region and the Internet. By maintaining public releases, the RIPE NCC hopes to encourage all LIRs to make use of the software and to acquire the newest improvements. This encourages data exchange and co-operation among LIRs.

The RIPE NCC will ensure the reliability of the RIPE Database and extend its functionality as needed.

This set of activities is designed to provide consistent support and provide a reliable service both in the short and long term, and to continue developments according to the needs of the RIPE community.

RIPE Working Group Advising:

RIPE Database WG

C1.1 User Support and Software Maintenance

Description:

The RIPE NCC manages a role mailbox for questions and comments and address user questions promptly.

The RIPE NCC will also perform basic software maintenance activities including bug fixes and minor modifications. All the results of these software development efforts will be made publicly available.

This activity includes the maintenance and improvement of the system's documentation.

Goal:

This activity is intended to provide a timely response to user enquiries. It also helps assure the smooth operation of the Registry System.

Related Activity:

C1.4

RIPE Working Group Advising:

RIPE Database WG

C1.2 Consistency

Description:

The RIPE NCC works to prevent inconsistencies and inaccuracies in the RIPE Database contents by improving syntax checks, modifying contact reference mechanisms, and educating users.

The RIPE NCC helps users perform data maintenance activities to improve the quality of data already in the RIPE Database. This includes reporting problems to contacts where possible and providing tools that enable users to correct and clean up their data. The RIPE NCC also produces regular "State of the Database Reports" to monitor the quality of data over time.

Goal:

The value of the RIPE Database for its users depends on the quality of the data. The goal of this activity is to monitor and improve the consistency and accuracy of the data maintained in the RIPE Database.

Related Activity:

C1.6

RIPE Working Group Advising:

RIPE Database WG

C1.3 Database Availability and Exchange

Description:

The RIPE NCC provides access to the RIPE Database via Whois servers and by supporting other sites in mirroring the data. For example, support is given to other registries in setting

up secondary database servers. The RIPE NCC actively pursues and co-ordinates data exchange both with other Regional IP Registries and other Routing Registries.

Goal:

This activity is intended to enable RIPE Database users to acquire the information they need quickly and to help those outside the RIPE region acquire information in the RIPE Database as easily as possible. This is essential for both the IP and the Routing Registries.

RIPE Working Group Advising:

RIPE Database WG and RIPE Routing WG

C1.4 New Database Features

Description:

The RIPE NCC designs and implements new database features as requested by the user community or proposed by the RIPE NCC. It performs the development work based on the priorities established in the appropriate RIPE working groups.

The RIPE NCC also reports at these working groups about the results of cooperation with other RIRs at a global level.

During 2002, effort will be renewed around the extension of RPSL functionality to expand its capabilities to IPv6 and multicast routing description, and achieving implementation of eventual agreed standards.

Goal:

The purpose of this activity is to provide new functionality to the RIPE Database as the user community expresses the need for it.

Related Activities:

C1.1

RIPE Working Group Advising:

RIPE Database WG

C1.5 Routing Registry Tool Deployment and Training

Description:

The RIPE NCC works to create support tools such as RR tools and the RAToolset. These tools will be made available to members of the RIPE community. The RIPE NCC will deliver training courses to teach the RPSL language and the use of the RR tools in configuring routers and examining policies and routing in the Internet.

Goal:

The RIPE NCC will take on further development of the RAToolset after completion of its transition from ISI/USC.

This toolkit allows router configurations to be generated and/or verified from the contents of the routing registry as well as sanity checking of the information registered at the RR. The goal of this activity is to enable members of the RIPE community to exploit RPSL and define the development of new RR tools.

RIPE Working Group Advising:

RIPE Routing WG

C1.6 Routing Registry Consistency

Description:

This activity seeks to improve data quality in the Internet Routing Registry as a public source of intended routing information (as described by the maintainers of the data, the ISPs). It also aims to improve data accessibility and processing capabilities to enable users to extract the largest possible benefit from this information source.

Goal:

The objective of this activity is to provide a public, accurate, and reliable source of information about public routing information in the RIPE NCC service region, comparing the intended routing policies as described in the IRR to the information actually exchanged by routing protocols. A coupling to the RIPE NCC address assignment activities is also an objective.

RIPE Working Group Advising:

RIPE Routing WG

C1.7 Security Mechanisms of the RIPE Database

Description:

This activity has traditionally been part of general RIPE Database development. However, in today's world, a more dedicated focus on data access and maintenance is required.

Goal:

This activity seeks to deploy secure methods of accessing and maintaining data in the RIPE Database. It will interface with a more general increase in awareness of security matters in all interactions between the RIPE NCC and other parties.

Related Activities:

M5

RIPE Working Group Advising:

RIPE Database WG

C2 Information Services, Communication, and Education

Description:

This set of activities ensures information flow between the RIPE NCC and the RIPE community as well as between these and other parties involved in Internet developments.

C2.1 Mailing List Management

Description:

The RIPE NCC maintains high quality mailing lists for exchanging information among members of the RIPE community. Efforts are made to prevent spam (unsolicited advertising) on the mailing lists, to improve the quality of the address lists in order to minimise bounces, and to support subscribers with problems. The processing of mailing list traffic is constantly monitored.

Goal:

To ensure the exchange of information among members of the RIPE community and to provide support for subscribers of RIPE mailing lists.

C2.2 Maintenance of Information Services

Description:

The RIPE NCC maintains a WWW and ftp server at http://www.ripe.net/ and ftp://ftp.ripe.net/ respectively and the accompanying webmaster@ripe.net role mailbox to provide help and information to users. This includes:

- Continuous modification and restructuring of the information on the WWW

server providing the best structure for ease of use to visitors of the site.
- Monitoring of the content of the servers to assure accuracy, consistency, and a user-friendly environment.

Goal:

The purpose of this activity is to ensure that the information and services on the RIPE NCC servers are up-to-date and working well and that responses to user needs are provided in a timely manner.

Related Activities:

C2.3

RIPE Working Group Advising:

All

C2.3 Public Relations and Outreach

Description:

The RIPE NCC has managed to establish an extensive network in the Internet community and with existing and new players in the industry. This will continue and be intensified.

In the past, all issues related to the 'RIPE NCC activities/IP address distribution' was brought up in the RIPE community. Today there are other groups and forums that deal with Internet and IP issues. The RIPE NCC needs to make contact with those organisations and ensure that RIPE and the RIPE NCC are properly represented in all forums dealing with issues that affect Internet administration. The open structures and processes in which RIPE and the RIPE NCC operate need to be promoted and new players must be encouraged to participate actively.

Focused effort must remain on new players, new technologies, and governments showing an interest in Internet administration and governance.

Goal:

This activity aims to increase the awareness of RIPE and the RIPE NCC with existing and new players in the Internet community, and ensure that the RIPE NCC continues to play an effective role in the further formalisation of Internet administration.

C2.4 Reporting

Description:

The RIPE NCC reports about its activities to its membership, the RIPE community, and the

general public both on the network and at RIPE Meetings. The RIPE NCC publishes an Annual Report, including financial statements, for distribution to its membership, suppliers, the mass media, and interested members of the public. The Annual Report also serves as a general Public Relations document. Continuous efforts are made in developing the website to provide up-to-date and informative documentation essential to the RIPE NCC membership.

Goal:

This activity provides the RIPE NCC membership and other interested parties with open, detailed information about the ongoing RIPE NCC activities and its position in the Internet community.

Related Activities:

C2.3, C4

C3 DNS Co-ordination

Description:

The RIPE NCC does not provide domain name registration services. It does, however, provide DNS co-ordination and support activities as well as registration of reverse address mapping domain registrations, currently within the in-addr.arpa and ip6.int domains.

C3.1 European Root Name Servers

Description:

The RIPE NCC supports the operation of the root name servers located in the RIPE NCC service region. In particular, it operates the server currently located at the LINX in London (k.root-servers.net).

Goal:

Those few DNS name servers serving the "." (root) zone are critical elements of the Internet infrastructure that should be operated in a neutral and professional way. The **goal** of this activity is to ensure that this happens.

RIPE Working Group Advising:

RIPE DNS WG

C3.2 Secondary DNS Service

Description:

The RIPE NCC provides secondary name service and limited support to those country TLD administrators that wish to use it. The RIPE NCC assists ICANN in the administration of those TLDs as described in RFC1591.

Goal:

Internet users depend on DNS name servers serving the zones of two- letter ISO3166 country code top-level domains. Name service for these zones should be reliable. New countries should be supported to establish their country code TLDs. Reverse zones are served in a secondary capacity to assist in ensuring the reliability of reverse lookups.

RIPE Working Group Advising:

RIPE DNS WG

C3.3 DNS Hostcount

Description:

The RIPE NCC provides monthly statistics on the number of hosts connected to the Internet in the RIPE NCC service region. The statistics are gathered in collaboration with numerous organisations doing local counts per country.

Goal:

The goal of this activity is to collect and publish uniform time series data about the growth of the Internet in the RIPE NCC service region. This is a continuation of data collection on Internet growth started in October 1990. The information and statistics are used extensively by LIRs and organisations operating in the RIPE NCC service region and beyond.

RIPE Working Group Advising:

RIPE DNS WG

C4 RIPE Meetings

Description:

The RIPE NCC provides administrative and technical support for the RIPE Meetings. These RIPE Meetings take place three times a year and are open to the public. Actual costs regarding venue, equipment hire, etc., are recouped by charging an attendance fee, as well as through corporate sponsorship.

Goal:
To provide support for an infrastructure whereby the RIPE Meetings can be held. Guidance

and advice from the RIPE Working Groups and membership is invaluable to the RIPE NCC in supporting its effective role in further formalising Internet administration. RIPE also plays an influential role in defining the annual activity plan and these meetings are therefore essential to the stable operations of the RIPE NCC.

N - New Activities

This area represents those activities that are either unforeseen or cannot be fully specified at the time of writing. By nature, new activities are hard to specify in detail and priorities can change quickly. Activities may be dropped or added as necessary. The activity descriptions below are therefore more of a subjective statement of direction rather than a fixed plan of action. In particular, some of the ideas below have not yet been fully discussed in the relevant RIPE working groups.

N1 Routing Information Service (RIS)

The goal of the Routing Information Service is to collect BGP routing information at several major exchange points in near real time, and store it in a database. An interface similar to a "looking glass" then provides both multiple views and information about specific times in the past. This is very useful to ISP operations because operators do not have to search for specific "looking glasses" covering their area of interest. Additionally, they can query the specific time of a problem rather than having access to just the present state of routing information. The database is also useful for the RIPE NCC itself as it allows Hostmasters to determine how prefixes and autonomous systems have been used on the Internet over an extended period.

To collect the information, six so-called Remote Route Collectors (RRCs) have been installed in the RIPE area. Early in 2002, two additional RRCs will be installed elsewhere in the world. After that, the RIPE NCC plans to evaluate the view of the Internet available to the RIS and, if necessary, install other RRCs to get a more comprehensive picture of BGP routing information. Peering sessions will continue to be established with interested ISPs.

User access to the collected data will be improved by adding additional queries to the database. Also, a daily report with graphs showing the development of key parameters in BGP routing will be added to the RIS.

Finally, the RIPE NCC will put more effort into communication with present and future users of the RIS to better understand their needs for new features based on the RIS data. Training materials showing how to use the RIS in day-to-day operations will be developed.

RIPE Working Group Advising:

RIPE Routing WG

N2 Deployment of Internet Security Infrastructure (DISI)

Description:

The RIPE NCC will gather information and experience by deploying the technologies itself and fostering their deployment in the RIPE community through presentations, courses, and workshops. ISPs and, specifically, RIPE NCC members have to play a key role in deploying these technologies. The RIPE NCC will initially focus on DNSsec and co-operate with other organisations working in this area, such as NLnet Labs, Nominum, and others. The RIPE NCC also actively participates in the IETF Working Groups on this topic.

Goal:

In 2001, the project focused on DNSsec. An introduction course to DNSsec has been developed. This course shows how to secure a zone using DNSsec. It will be offered to the membership at regular intervals starting at RIPE 40. The number and location of the courses in 2002 will be determined based on user feedback.

Also, the RIPE NCC will continue its efforts to have in-addr.arpa secured for all address blocks allocated to the RIPE NCC by the end of 2001. The experience gained will be shared with the community in workshops and white papers. Another goal is to take part in creating BCP-type RFCs on the deployment of DNSsec. One draft has recently been tabled in the agenda of the DNSext Working Group, with more expected to follow.

Developments in the Internet security area are energetically followed and the project will be expanded in the course of 2002, based on user feedbacks and industry developments.

RIPE Working Group Advising:

RIPE Techsec-WG

N3 Unforeseen Activities

Description:

The RIPE NCC actively follows the developments in the Internet and reacts to any requirements for new activities from the RIPE community. In the past, the RIPE NCC has been requested to study and start up a fair number of new activities at short notice. Many of them have been successful because this possibility has been provided for in the activity plans since the inception of the RIPE NCC.

Goal:

The goal of this activity is to ensure that the RIPE NCC continues to react promptly to the developments and changing needs of the Internet environment.

RIPE Working Group Advising:

Depending on the activity