

RIPE NCC Hostcount in the 21st Century

A New Direction for Measurements by the RIPE NCC

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1. Introduction

The RIPE NCC has collected data and published statistics from its inception. In fact the hostcount has even started before the RIPE NCC began operations. Other measurement and data collection activities have been added later, most notably Test Traffic Measurements (TTM) and the Routing Information Service (RIS).

After more than 10 years it is time to re-visit this area and adjust the direction based on input from the RIPE community and the NCC membership. This memo proposes the new direction and seeks to establish consensus among the RIPE NCC membership.

2. Why Measurements

Besides satisfying the curiosity of the RIPE community and fostering academic research there are a number of reasons for collecting and publishing measurements:

Statistics such as address space usage and routing table growth are vital for the development of address space policies and RIPE operational recommendations. Data such as the usage history of address space and routing identifiers is used

extensively by the NCC in daily operations, so is monitoring data on the quality of the DNS root service.

The NCC also produces measurement products for use by the membership in both short term operations and long term planning. TTM gives test-box hosts both minute-to-minute information and long term trends. RIS can be used to get a global picture of inter-domain routing from a single source and is unique in providing this information not only for the present but also for user selectable time intervals in the past.

Last but not least RIPE NCC statistics are also aimed at telecomms regulators and government bodies that look after public interest concerns in our industry. To them we provide a neutral and unbiased view on developments that goes a bit deeper than some ad-hoc measurements that are published to further specific agendas. This area has become increasingly important over the last few years.

3. Strengths

The biggest strength of the RIPE NCC in the area of measurements is its proven neutrality and impartiality. We have developed this over the years and earned the trust of all players. The NCC staff doing the work have a very high degree of professionalism and experience in the area; this results in very high quality data that is used widely. We are not doing any passive measurements on production traffic in order to avoid privacy concerns. Because of our long history of measurement activities we have a number of very long time series of well defined measurements which can be used to analyse long-term trends.

4. Weaknesses

The emphasis on producing high-quality well defined data has lead us to take a somewhat academic attitude towards measurements. Our products are very detailed and need considerable time to use effectively and to learn how-to use in the first place. We have not developed enough easy to use and immediately useful products for the RIPE NCC membership and the RIPE community at large.

We have developed TTM as closed user group service. Only those who participate and pay have access to the data. We assumed that the user group would grow to a significant part of the RIPE NCC membership as the benefits became obvious. This has not happened for a number of reasons one of which is certainly that it has become very easy and cheap just to add capacity. Consequently TTM today serves only a very small minority of the NCC membership and there are continuing concerns about the service being unduly subsidised by the non-participating majority.

5. The Way Forward

We will build on our strengths and continue neutral and high quality measurements. We will also keep to our principle of never reading production traffic for measurements in order to avoid any privacy concerns.

We will respond to Internet incidents and events that generate a lot of public interest, such as the Sapphire worm of 25.01.03, by providing objective and comprehensive data for use by the membership and the general public.

<http://www.ripe.net/ttm/worm/index.html>

We will develop more simple and immediately useful products. The challenge is to develop products that are both simple and meaningful while maintaining some scientific defendability. One avenue we will pursue is to provide simplified measures for the Internet in general: for example a measure of global or regional routing stability across all providers; a NOC could use such a measure to determine quickly whether any instability is local to its responsibility or more widespread. Another avenue is to develop personalised views on the data such as the "myAS" service which provides user configurable history data and alarms based on the RIS measurements as well as various registration databases.

We will discontinue the TTM closed user group and publish all our raw data as well as all derived products as a matter of policy. Even when performing measurements for a particular group and paid by this group, such as DNS (root) service quality, all results will be public. This addresses the cross-subsidy concerns as there is always a benefit for the community at large. Details of the transition from the present TTM business model will need to be worked out. We envisage that organisations hosting a test-box will continue to pay a service fee at a reduced level; after all there is some benefit in obtaining measurements from a local point. We expect to expand the number of test-boxes will increase with this new model.

We have recently started to structurally monitor DNS root service quality because this is essential for our operation of k.root-servers.net, especially once this service will be using IP anycast. The quality of these measurements has generated significant interest from ccTLD operators. We will develop this into a public service and expand it to other TLDs based on funding from these TLDs.

<http://www.ripe.net/ttm/DNS/>

We will also work to improve the web presentation of our measurement results by using more uniform presentation formats and a better navigation structure; such a structure could possibly be used for all statistics produced by the RIPE NCC. Building on the NCC's experience with high quality training courses We will offer training courses on how to use our measurement products.

6. Membership Support

Organisations gaining specific benefits from the measurements will be charged appropriately as outlined above. Because all data is made public and there is a definite benefit for the community at large we seek support from the RIPE NCC membership to structurally fund these measurement activities with approximately EUR 600k p.a. (6% of the NCC's total operating expenses in 2003) over the coming 4 years. This will provide a solid basis for continuing high quality measurements, to undertake the work outlined above and to publish all results appropriately.

We will work out a more detailed plan including details about milestones, review and budget after RIPE 45 based on community input. This plan will be presented at RIPE46 and included in the RIPE NCC Activity Plan discussed at this year's membership meeting.

7. Summary

- Measurements are necessary and the RIPE NCC is the place to do them.
- All results will be public, no more closed user groups.
- We will introduce more simple and quick-to-use products.
- We will improve presentation, documentation and courses.
- We ask for support to spend approximately EUR 600k p.a.