IPv4 Allocations by LIRs to ISPs – A proposal

Proposed by: APNIC
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1   Summary

This document proposes modifying the current policy framework as described in "Policies for IPv4 address space management in the Asia Pacific region", available at:

http://www.apnic.net/docs/policy/add-manage-policy.html

It is proposed to modify the current policy framework to recognise allocations made by LIRs to their downstream ISPs and other entities.

2   Background and problem

Under current APNIC policy, LIRs are able to make assignments to their customers, but not allocations. Assignments cannot be sub-assigned. However, many LIRs have downstream ISPs and other entities as customers. These LIRs would prefer to make allocations to their customers, so that those customers can make assignments to their own customers as necessary.

In practice, address space is sometimes allocated by LIRs to downstream ISPs, even though APNIC policies do not properly determine how that address space should managed.

If this practice is to continue, it should be formally recognised in APNIC policy. This policy issue is topical now because of technical changes to the registration system. Previously, such sub-allocations were able to be registered because the "status" attribute was optional in the Whois database software. However, with the recent upgrade of the Whois database, the status attribute becomes mandatory, as does the use of agreed status values.

3   Other RIRs
3.1   RIPE NCC

In the RIPE NCC service region, LIRs can only assign address space. LIRS are not permitted to allocate address space. Therefore, downstream ISPs must either become members of RIPE-NCC to receive portable address space, or arrange for their LIR to request multiple assignments on their behalf.

This policy is documented at:

http://www.ripe.net/ripe/docs/ipv4-policies.html

The practice of LIRs making allocations (or "sub-allocations") has been raised as an agenda item for the LIR working group at the next RIPE meeting in September.

3.2 ARIN

In the ARIN service region, members who receive allocations from ARIN are permitted to make allocations to downstream customers.

3.3 LACNIC

Similarly, in the LACNIC service region, members who receive allocations from LACNIC are permitted to make allocations to their downstream customers.

4 Proposal

It is proposed that LIR members of APNIC or an NIR should be permitted to make allocations to downstream customers such as ISPs. Such allocations will be non-portable.

4.1 Database Registration

Where an allocation is being made by an LIR, this will be reflected in the 'status' attribute of the 'inetnum' object with the value 'ALLOCATED NON-PORTABLE'. If the customer of the LIR receiving the allocation discontinues service with that LIR, they will be required to return the address allocation to the LIR.

4.2 Second Opinion

The "second opinion" procedure will be expanded to include allocations made by LIRs, as well as their assignments. All allocations and assignments above the LIR's assignment window will be sent to APNIC for review.

4.3 Verification

Applications for additional address space continue to follow the eighty percent usage rule. See section 9.5 of "Policies for Policies for IPv4 address space management in the Asia Pacific region", at:

http://www.apnic.net/docs/policy/add-manage-policy.html#9.5

Address space usage will be evaluated by considering both the number of assignments and allocations registered in the database.

For example, if an LIR has received a /20 from APNIC and this has been divided into 2 allocations of /22, and the remainder has been assigned, the two /22 allocations will be considered as "used". However, APNIC will give careful consideration to the registration of assignments within the allocations, and may request supporting documentation as necessary. In addition, allocations made by LIRs will be subject to the second opinion process as detailed in section 4.2 above.

4.4 Limit on ability to sub-allocate

It is proposed that the ability to make sub-allocations under this policy will be restricted to LIRs only. The downstream customers which receive an allocation from an LIR will not be permitted to further sub-allocate this address space.

This restriction is considered necessary to protect the stable management of IPv4 resources. Even allowing sub-allocations by LIRs does reduce the potential efficiency of address space usage. It is believed that this is a justifiable and manageable trade-off. However, to allow additional multiple levels of sub-allocations would create a level of inefficiency that would not be considered acceptable in IPv4.

Furthermore, without this restriction, there would be a risk that LIRs would not be able to maintain proper management of the address space and that downstream allocations and assignments may not be properly registered.

5 Implementation

The proposal will be implemented three months from the date of consensus. This allows time for modification of documentation, forms and procedures. However, requests will be accepted and processed using existing forms in the interim period.