LAC-2006-08

Number:	LAC-2006-08
Policy Proposal Name:	Provider Independent (PI) IPv6 Assignments for End User Organisations
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Proposal Version:	1.0
Current Status :	Discussion Phase - Open for Discussion

Summary of Proposal:

This policy is intended to provide a solution for organisations that need IPv6 Provider Independent (PI) assignments.

Typically, such organisations will require the PI assignment to become Multihomed as happens for IPv4, but there may be other reason behind requests. For example, some organisations are not Multihomed, but still need their assignments to be globally routable with stable addressing. They may wish to avoid renumbering if they change the upstream provider. This could be for administrative, policy or security reasons. In such cases, it seems that no other solution than PI assignments would currently be feasible.

Considering the probable medium to long-term consequences of this policy on routing tables, this proposal suggests an expiry date of three years for this policy. The three years period will count once an alternative technically valid and deployable solution would be devised and accepted by the Internet community. After a 'sunset' period, the assignments made for Multihoming purposes should be reclaimed, and this policy should be modified to continue to allow assignments that could be needed for purposes other than Multihoming.

At that time, any organisations that wanted to avoid renumbering would be able to opt to become an LIR/ISP, if they qualify, and be allocated the same prefix.

Draft Policy Text:

Qualification for an IPv6 Provider Independent (PI) Assignment:
To qualify for a direct assignment, the organisation must not be an IPv6 Local Internet Registry (LIR/ISP) and must qualify for an IPv4 assignment or allocation from the LACNIC under current IPv4 policies. This applies whether or not the organisation has already been assigned or allocated an IPv4 block.

PI IPv6 Assignment Size to End User Organisations:
The minimum size of the assignment is /32. However, a larger assignment can be provided if duly documented and justified.

Subsequent Assignment Size to End User Organisations:
Whenever possible, further assignments will be made from adjacent address blocks, but only if duly documented and justified.

Assignment 'Super Block':
Assignments will be allocated from a separate 'super block' to allow LIR/ISPs to filter them, if required.

Expiry for Assignments:
Assignment blocks made under this proposal to address Multihoming issues must be returned to the LACNIC after a maximum period of three years. The three years period will start to count once an alternative technically valid and deployable solution is available and accepted by the Internet community. Any organisations that wanted to avoid renumbering would be able to opt to become an LIR/ISP, if they qualify, and be allocated the same prefix.

Rationale:
a. Arguments Supporting the Proposal

In IPv4, there are organisations that qualify for a PI allocation, or that could opt to become an LIR/ISP. This may be because they need either to be Multihomed or have other administrative or technical reasons for needing a portable addressing block.

This is currently not the case for IPv6, and is perceived as a clear barrier for deployment of IPv6 in some organisations. This policy proposal addresses that barrier by means of providing a direct assignment from the LACNIC.

Any organisation receiving such an allocation would not be allowed to make further assignments to other external organisations, but instead only to assign subnets internally within their own facilities.

Assigning a /32 would make those blocks behave as other regular LIR/ISP allocated ones and follow generally accepted routing filtering practices. At the same time, the blocks would be identifiable as belonging to a special 'super block'. This would also allow organisations to become an LIR/ISP and avoid the need for renumbering.

By setting up this policy, we would avoid creating an unfair situation among different regions, and meet the needs of any organisation that required PI address space. All organisations that opt for this PI, will be in an equal position once the community agrees a long-term technical solution and will have to either move to this new solution or become an LIR/ISP, if they qualify. Newcomers will also be in the same position. Some organisations will not opt for PI under this policy because they do not need it. This would avoid placing them in an unfair situation.

Those that do not believe in possible alternative solutions, but who prefer to go for a permanent PI policy, have no valid reasons to oppose to this proposal, as the 'sunset period' would only come into effect once a suitable solution had been agreed. This proposal is, therefore, not going to interfere with their plans.

Some organisations may qualify to become an LIR/ISP now, and avoid using this temporary assignment. However, if their only reason to become an LIR/ISP is to get a PI block, then it may a better control for the routing table size in the long-term, if they use the option offered by this proposal. This would be fairer to the wider Internet community.

The 'temporary' nature of this assignment must be considered long-term, as we may expect alternative solutions to be available in around three to four years. This takes no account of a transition period. Therefore, asking for a change after six or seven years should be acceptable to all.

b. Arguments Opposing the Proposal

The possible effect of this proposal is a growth of global routing tables to levels that, together with the existing and forecast IPv4 routing entries, could create significant issues for operators unless vendors can provide products that address such issues. Even if such technical solutions were found, the proposal could still have a major impact on the cost and/or depreciation period for infrastructure investments.

For this reason, this proposal comes with a fixed 'sunset' period, dependant upon the date when an alternative technically viable solution is available and accepted by the Internet community.

A temporary /32 assignment should not be seen as a waste of address space. It would bring with it the advantage of removing the needs for new special filters and avoiding renumbering to those that could become LIR/ISPs.

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