

# Proposal for provider independent IPv6 address space assignments for Internet exchanges

Proposed by: APNIC  
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## 1. Summary

This document proposes a policy for provider independent IPv6 address space assignments for Internet exchanges.

The current IPv6 policy document anticipates the need for such assignments, but, to date, does not describe a policy under which they made be made.

## 2. Background and problem

### 2.1. Current policy position

The current version of the *Provisional IPv6 Assignment and Allocation Policy Document* (<http://www.apnic.net/drafts/ipv6/ipv6-policy-280599.html>) is a document that was jointly produced by the existing Regional Internet Registries (RIRs).

Section 4.2.3.1 of this document states as follows:

“It is expected that some exchange points will play a new role in IPv6, by acting as a sub-TLA registry for ISPs that connect to the exchange point. Because there is little information available about such exchange points and how they will operate, they have not been considered during development of sub-TLA eligibility criteria. As these exchange points are established, the Regional IRs will evaluate whether special criteria are required.”

Recently a number IPv6 requests have been sent to the RIRs concerning address space requirements for exchange points. The amounts of address space requested for the purpose of addressing the infrastructure of exchange points are small (typically /48). Mostly these requests are for assignments that are “portable” and do not form part of a provider's address block.

The current policy document does not provide criteria for small portable address space assignments in IPv6.

### 2.2. Current status of IXP operators

Some Internet Exchange point (IXP) operators have stated that they need portable address space assignments for their infrastructure, to allow their members and customers to connect to the Internet via native IPv6. However, IXPs do not generally fulfill the current criteria for receiving a sub-TLA allocation, nor do they require an allocation of that size. It has been suggested that a /48 or even a /64 could be sufficient for many IXPs.

### **2.3. Policy implications**

This problem could be resolved by a specific policy which considers IXPs as a site that is eligible to receive a provider independent assignment of either /48 or /64. IXPs with sufficient network requirements would remain able to apply for IPv6 allocations under the allocation criteria.

## **3. Other RIR's**

### **3.1. RIPE NCC**

In the RIPE region this was extensively discussed, both on the mailing lists and at the 39th meeting in Bologna, Italy in May. A summary of the consensus reached [<http://www.ripe.net/ripe/mail-archives/lir-wg/20010401-20010701/msg00228.html>] following the meetings is provided below:

Definition of an exchange point:

“A physical network infrastructure (layer 2) operated by a single entity with the purpose to facilitate the exchange of Internet traffic between Internet service providers. The number of Internet Service providers connected should at least be three and there must be a clear and open policy for others to join.”

Recommended PI assignment size:

- /48 in most cases
- /64 if it is known that there will only be one subnet (following the IAB recommendation)

Warning:

The RIRs should warn the IXP that it is strongly discouraged to announce the addresses and that such assignments are not likely to be globally routable.

The archives of the discussions can be found at:

<http://www.ripe.net/ripe/mail-archives/ipv6-wg/current/>

### **3.2. ARIN**

There have been some discussions on the mailing list which are archived at:

<http://www.arin.net/maillinglists/v6wg>

To date there has been no consensus.

## **4. Proposal**

It is proposed to adopt the consensus of the RIPE discussions, as described above in section 3.1.

## **5. Additional discussion**

n/a

## **6. Benefits**

Adoption of this proposal is anticipated to bring the following benefits:

- clear procedures for IPv6 exchange points to obtain necessary IPv6 address space.

## **7. Outstanding issues**

Several other aspects of the *Provisional IPv6 Assignment and Allocation Policy Document* remain under review in the three RIR communities. Proposals dealing with some of these issues may be presented separately.

## **8. Proposed implementation**

It is proposed that APNIC implement this new policy immediately after consensus has been reached. Address space will be assigned either from a special sub-TLA set aside for this purpose from the APNIC allocated ranges or from a subTLA delegated by IANA.

## **9. Conclusion**

It is recommended that the policy described above be adopted.

## **10. Comments**

Comments and feedback on this proposal are now invited from the community and very welcome.