

LAC-2006-07 Size of IPv6 Assignments

Modification of the Size of IPv6 Assignments

Proposal

According to item 5.4.1 of the IPv6 Space Assignment and Allocation Policy:

" Assignments are to be made in accordance with the existing guidelines [RFC3177,RIRs-on-48], which are summarized here as:

/48 in the general case, except for very large subscribers
/64 when it is known that one and only one subnet is needed by design
/128 when it is absolutely known that one and only one device is connecting."

From this we can infer that the policy establishes that the minimum default assignment to an end site is a /48, while the others are simply exceptions to this rule.

Thus, a broad band user, a small company, or a large corporation would obtain an initial assignment of a /48. Separating from the 128 bits that make up an IPv6 address the final 64 bits (which are reserved for the interface), each of these users could utilize the assigned space to generate up to 65536 subnets (2^{16} , the 16 bits being the result of 64-48). It is inferred that few of these end users effectively have a need to handle 65536 subnets, and therefore making this assignment implies a high level of inefficiency in the distribution of addresses and, consequently, resources are wasted.

It is proposed to modify the IPv6 assignment policy so that it will allow LIRs to assign /56s in the case of end users that are small and medium-size companies, residential or personal networks, where the number of potential subnets is greater than 1 but smaller than 256.

It is proposed to modify the paragraph that addresses /48 assignments, so that it will specifically refer to assignments to end users that are large companies and corporate environments that require more than 256 subnets.

It is proposed to make the default assignment a /56, both in the definition of Utilization (item 2.7 of the current policy) as well as for calculating the HD Ratio.