

LAC-2006-04 ASN 32 bits

1. Policy Proposal Name:

4-Byte AS Number Policy Proposal

2. Author:

Geoff Huston
gih at apnic.net
APNIC

3. Proposal Version:

1.0

4. Submission Date:

9 December 2005 (resubmitted on the 30th December)

5. Proposal Type:

New

6. Policy Term:

Temporary (1 January 2007 - 1 January 2010)

7. Policy Statement:

This policy proposal nominates 3 dates for changes to the current AS Number allocation policy for the registry:

1. On 1 January 2007 the registry will process applications that specifically request 32-bit only AS Numbers and allocate such AS Numbers as requested by the applicant. In the absence of any specific request for a 32-bit only AS Number, a 16-bit only AS Number will be allocated by the registry.

2. On 1 January 2009 the registry will process applications that specifically request 16-bit only AS Numbers and allocate such AS Numbers as requested by the applicant. In the absence of any specific request for a 16-bit only AS Number, a 32-bit only AS Number will be allocated by the registry.

3. On 1 January 2010 the registry will cease to make any distinction between 16-bit only AS Numbers and 32-bit only AS Numbers, and will operate AS number allocations from an undifferentiated 32-bit AS Number allocation pool.

No other changes in AS number allocation policy are implied by this proposal.

8. Rationale:

Recent studies of AS number consumption rates indicate that the existing pool of unallocated 16-bit AS Numbers will be exhausted sometime in the period between 2010 and 2016, absent of any concerted efforts of recovery of already-allocated AS Numbers [1] [2].

Standardization work in the IETF has produced a document that is currently being submitted as a Proposed Standard that will expand the AS Number space to a 32-bit field [3].

It is noted that some advance period may be required by network operators to undertake the appropriate procedures relating to support of 32-bit AS numbers, and while no flag day is required in the transition to the longer AS Number

field, it is recognised that a prudent course of action is to allow for allocation of these extended AS numbers well in advance of an anticipated 16-bit AS Number exhaustion date.

This policy proposal details a set of actions and associated dates for RIR AS Number allocation policies to assist in an orderly transition to use of the 32-bit AS Number space.

The essential attributes of this policy proposal are to facilitate the ease of transitional arrangements by equipment vendors, network managers and network operations staff, to provide the industry with some predictability in terms of dates and associated actions with respect to registry operational procedures for AS Number allocations.

Nomenclature

It is proposed to identify 32-bit AS Numbers using a syntax of <high order 16 bit value in decimal>.<low order 16 bit value in decimal>.

Accordingly, a 32-bit AS number of value 65546 (decimal) would be identified as "1.10".

Terminology

"16-bit only AS Numbers" refers to AS numbers in the range 0 – 65535

"32-bit only AS Numbers" refers to AS Numbers in the range 1.0 – 65535:65535 (decimal range 65,536 - 4,294,967,295)

"32-bit AS Numbers" refers to AS Numbers in the range 0.0 – 65535.65535 (decimal range 0 – 4,294,967,295)

References

[1] Daily AS Number Report, <http://www.potaroo.net/tools/asns> [2] ASNs MIA: A Comparison of RIR Statistics and RIS Reality, <http://www.nanog.org/mtg-0510/wilhelm.html>

[3] BGP Support for Four-octet AS Number Space, draft-ietf-idr-as4bytes-12.txt

9. Timetable for implementation:

Procedures to support this proposal need to be implemented by 1 January 2007