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Textual Representation of AS Numbers
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Abstract

A textual representation for Autonomous System (AS) numbers is defined using "asdot" notation. This textual representation is to be used by all documents, systems and user interfaces referring to AS numbers.

1. Introduction

A textual representation for Autonomous System (AS) numbers is defined using "asdot" notation. This textual representation is to be used by all documents, systems and user interfaces referring to AS numbers.

This document notes a number of potential representation formats and proposes the adoption of "asdot" notation, according to the representation taxonomy described here.

2. Taxonomy of Representation Formats

A taxonomy of representation for AS numbers is as follows:

asplain

refers to a syntax scheme of representing all AS numbers using decimal integer notation. Using asplain notation an AS number of value 65526 would be represented as the string "65526" and as AS number of value 65546 would be represented as the string "65546".

asdot+

refers to a syntax scheme of representing all AS numbers using a notation of two integer values joined by a period character: <high order 16-bit value in decimal>.<low order 16-bit value in decimal>. Using asdot+ notation, an AS number of value 65526 would be represented as the string "0.65526" and an AS number of value 65546 would be represented as the string "1.10".

asdot

refers to a syntax scheme of representing AS number values less than 65536 using asplain notation and representing AS number values equal to or greater than 65536 using asdot+ notation. Using asdot notation, an AS number of value 65526 would be represented as the string "65526" and as AS number of value 65546 would be represented as the string "1.10".

3. Representation of AS Number Values

To avoid confusion, a single textual notation is useful for documentation, configuration systems, reports, and external tools and information repositories. The dotted decimal value representation, or "asdot" is proposed as the textual notation to use for AS Numbers.

This notation allows explicit delineation between the set of 16-bit

AS numbers and the expansion set of numbers with non-zero values in the high order 16 bits of the 32 bit representation of the AS number value. The "asdot" representation may reduce the potential for transcription errors on the part of network operators

4. IANA Considerations

IANA Registries should use dotted decimal representation ("asdot") for AS numbers.

5. Security Considerations

This document does not refer to matters associated with security of routing systems.

6. Acknowledgments

The terminology of "asplain", "asdot" and "asdot+" was originally devised and described by Juergen Kammer in January 2007 [[KAMMER2007](#)].

7. Informative References

[KAMMER2007]

Kammer, J., "AS Number Formats", Jan 2007,
<<http://quagga.ncc.eurodata.de/asnumformat.html>>.

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