Network Working Group
Request for Comments: 3595
Category: Standards Track

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September 2003

Textual Conventions for IPv6 Flow Label

Status of this Memo

Copyright Notice

Abstract

This MIB module defines textual conventions to represent the commonly used IPv6 Flow Label. The intent is that these textual conventions (TCs) will be imported and used in MIB modules that would otherwise define their own representations.

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1. Introduction

Several standards-track MIB modules have defined objects to represent an IPv6 Flow Label (sometimes referred to as Flow ID) [RFC2460] [FLOWLABEL] and IPv6 Flow Label filters. Unfortunately the result is a set of different definitions for the same piece of management information. This may lead to confusion and unnecessary complexity.

This document defines a set of textual conventions (TCs) that can and should be (re-)used in MIB modules, so that they all represent an IPv6 Flow Label in the same way. In fact, PIB modules can and should also use these TCs when they need to represent an IPv6 Flow label.

2. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to section 7 of RFC 3410 [RFC3410].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIv2, which is described in STD 58, RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580 [RFC2580].

3. Definitions

```
IPV6-FLOW-LABEL-MIB DEFINITIONS ::= BEGIN

IMPORTS

    MODULE-IDENTITY, mib-2, Integer32           FROM SNMPv2-SMI
    TEXTUAL-CONVENTION                          FROM SNMPv2-TC;

ipv6FlowLabelMIB   MODULE-IDENTITY

    LAST-UPDATED  "200308280000Z"  -- 28 August 2003
    ORGANIZATION  "IETF Operations and Management Area"
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```

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                     Phone: +31 348-407-775
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                     Send comments to <mibs@ops.ietf.org>.
                    "
        DESCRIPTION  "This MIB module provides commonly used textual
                     conventions for IPv6 Flow Labels.

                     Copyright (C) The Internet Society (2003).  This
                     version of this MIB module is part of RFC 3595,
                     see the RFC itself for full legal notices.
                    "
        -- Revision History

        REVISION     "200308280000Z"  -- 28 August 2003
        DESCRIPTION  "Initial version, published as RFC 3595."

        ::= { mib-2 103 }

    IPv6FlowLabel      ::= TEXTUAL-CONVENTION
        DISPLAY-HINT  "d"
        STATUS         current
        DESCRIPTION  "The flow identifier or Flow Label in an IPv6
                     packet header that may be used to discriminate
                     traffic flows.
                    "
        REFERENCE    "Internet Protocol, Version 6 (IPv6) specification,
                     section 6.  RFC 2460.
                    "
        SYNTAX         Integer32 (0..1048575)

    IPv6FlowLabelOrAny ::= TEXTUAL-CONVENTION
        DISPLAY-HINT  "d"
        STATUS         current
        DESCRIPTION  "The flow identifier or Flow Label in an IPv6
                     packet header that may be used to discriminate
                     traffic flows.  The value of -1 is used to
                     indicate a wildcard, i.e. any value.
                    "
        SYNTAX         Integer32 (-1 | 0..1048575)

    END
```

4. Security Considerations

The MIB module contained in this memo does not define any management objects. Instead, it defines a set of textual conventions which may be used by other MIB modules to define management objects.

Meaningful security considerations can only be written for MIB modules that define concrete management objects. This document has therefore no impact on the security of the Internet.

5. Intellectual Property Statement

6. References

6.1. Normative References

[RFC2460] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", RFC 2460, December 1998.

[RFC2578] McCloghrie, K., Perkins, D. and Schoenwaelder, "Structure of Management Information Version 2 (SMIv2)", STD 58, RFC 2578, April 1999.

[RFC2579] McCloghrie, K., Perkins, D. and J. Schoenwaelder,"Textual Conventions for SMIv2", STD 58, RFC 2579, April 1999.

[RFC2580] McCloghrie, K., Perkins, D. and J. Schoenwaelder, "Conformance Statements for SMIv2", STD 58, RFC 2580, April 1999.

6.2. Informative References

[FLOWLABEL] Carpenter, B., Conta, A., Deering, S. and J. Rajahalme, "IPv6 Flow Label Specification", Work in Progress.

[RFC3410] Case, J., Mundy, R., Partain, D. and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", RFC 3410, December 2002.

7. Acknowledgments

This document was produced as a result of a review of the use of FlowID in a PIB module and a MIB module. Further investigation found that FlowID and FlowLabel objects were defined in a few other MIB modules. The editor would like to thank all who contributed to the discussion that resulted in this document, particularly Juergen Schoenwaelder for finding and reporting most of the other MIB modules that were using/defining a FlowLabel object. Juergen also suggested the very first direction for a common TC for these objects. Further contributions were received from Fred Baker, Dan Romascanu, Kwok Ho Chan, Margaret Wasserman, Brian Carpenter, Andy Bierman, Randy Presuhn, Branislav Meandzija, Brian Williams, Ravi Sahita. We also received initial input from 3GPP that expressed the requirement to be able to specify a wildcard for FlowID or FlowLabel. Further helpful review comments were received from Brian Carpenter, John Loughney, Pekka Savola.

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9. Full Copyright Statement

Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.