

## Textual Conventions for IPv6 Flow Label

### Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

### Copyright Notice

Copyright (C) The Internet Society (2003). All Rights Reserved.

### 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.

### Table of Contents

1. Introduction . . . . .	2
2. The Internet-Standard Management Framework . . . . .	2
3. Definitions . . . . .	2
4. Security Considerations . . . . .	4
5. Intellectual Property Statement. . . . .	4
6. References . . . . .	4
6.1. Normative References . . . . .	4
6.2. Informative References . . . . .	5
7. Acknowledgments . . . . .	5
8. Author's Address . . . . .	5
9. Full Copyright Statement . . . . .	6

## 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"  
CONTACT-INFO "Bert Wijnen (Editor)  
Lucent Technologies  
Schagen 33  
3461 GL Linschoten  
Netherlands

Phone: +31 348-407-775  
EMail: bwijnen@lucent.com

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

The IETF takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on the IETF's procedures with respect to rights in standards-track and standards-related documentation can be found in BCP-11. Copies of claims of rights made available for publication and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementors or users of this specification can be obtained from the IETF Secretariat.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights which may cover technology that may be required to practice this standard. Please address the information to the IETF Executive Director.

#### 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.

## 8. Author's Address

Bert Wijnen  
Lucent Technologies  
Schagen 33  
3461 GL Linschoten  
Netherlands

Phone: +31-348-407-775  
EMail: bwijnen@lucent.com

## 9. Full Copyright Statement

Copyright (C) The Internet Society (2003). All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assignees.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## Acknowledgement

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

