none
Internet-Draft
Expires: March 2, 2005

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september 2004

Textual Conventions for Virtual Local Area Network Identifiers (VLAN-ID)

draft-ietf-ops-vlanid-tc-mib-01.txt

Status of this Memo

Copyright Notice

Abstract

This memo defines textual conventions to represent the commonly used Virtual Local Area Network Identifier (VLAN-ID). The intent is that these textual conventions (TCs) will be imported and used in MIB modules that would otherwise define their own representations.

1. Introduction

Various Working Groups have defined standards-track MIB documents (for example [RFC2613], [RFC2674] and [RFC3318]), that contain objects and Textual Conventions to represent a Virtual Local Area Network Identifier (VLAN-ID) [IEEE.802-1Q.2003]. New definitions are showing up in various Internet-Drafts (for example [I-D.ietf-ipcdn-qos-mib], [I-D.ietf-rmonmib-sspm-mib]). 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 a VLAN-ID in the same way. In fact, PIB modules can and should also use these TCs when they need to represent a VLAN-ID.

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

```
VLAN-ID-MIB DEFINITIONS ::= BEGIN

IMPORTS

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

vlanIdMIB   MODULE-IDENTITY

    LAST-UPDATED  "200409270000Z"  -- 27 September 2004
    ORGANIZATION  "IETF Operations and Management Area"
    CONTACT-INFO  "Bert Wijnen (Editor)
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                     Send comments to <mibs@ops.ietf.org>.
                    "
      DESCRIPTION   "This MIB module provides commonly used textual
                     conventions for VLAN Identifiers.

                     Copyright (C) The Internet Society (2004). This
                     version of this MIB module is part of RFC XXXX,
                     see the RFC itself for full legal notices.
                    "
                    -- RFC-Editor: assign XXXX above
                    --             then remove this note

      -- Revision History

      REVISION      "200409270000Z"  -- 27 September 2004
      DESCRIPTION   "Initial version, published as RFC XXXX."
                    -- RFC-Editor: assign XXXX above,
                    --             then remove this note

      ::= { mib-2 nnn } -- To be assigned by IANA

   VlanIdentifier        ::= TEXTUAL-CONVENTION
      DISPLAY-HINT     "d"
      STATUS            current
      DESCRIPTION      "The VLAN ID that uniquely identifies a VLAN.  It
                        is the 12-bit VLAN ID used in the VLAN Tag header.
                        The range is defined by the REFERENCEd specification.
                       "
      REFERENCE        "IEEE Std 802.1Q 2003 Edition, Virtual Bridged
                        Local Area Networks.
                       "
      SYNTAX            Integer32 (1..4094)

   VlanIdentifierOrAny   ::= TEXTUAL-CONVENTION
      DISPLAY-HINT     "d"
      STATUS            current
      DESCRIPTION      "The VLAN ID that uniquely identifies a VLAN.

                        The special value of 4095 is used to indicate a
                        wildcard, i.e. any value.
                       "
      SYNTAX            Integer32 (1..4094 | 4095)
```

```
   VlanIdentifierOrNone  ::= TEXTUAL-CONVENTION
       DISPLAY-HINT     "d"
       STATUS            current
       DESCRIPTION      "The VLAN ID that uniquely identifies a VLAN.

                         The special value of zero is used to indicate
                         that no VLAN ID is present or used.
                        "
       SYNTAX            Integer32 (0 | 1..4094)

   VlanIdentifierOrAnyOrNone  ::= TEXTUAL-CONVENTION
       DISPLAY-HINT     "d"
       STATUS            current
       DESCRIPTION      "The VLAN ID that uniquely identifies a VLAN.

                         The special value of zero is used to indicate
                         that no VLAN ID is present or used.

                         The special value of 4095 is used to indicate a
                         wildcard, i.e. any value.
                        "
       SYNTAX            Integer32 (0 | 1..4094 | 4095)

   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. IANA Considerations

IANA is requested to assign an OID under mib-2 to the MIB module in section Section 3.

6. Acknowledgments

This document was produced as a result of a review of the use of VLAN-ID in several MIB modules. Further investigation found that VLAN-ID objects were defined in a few other MIB modules. The editor would like to thank all who contributed to the discussion which resulted in this document. Specifically Les Bell, Andrew Smith, Mike

Heard, Randy Presuhn, Dan Romascanu, Eduardo Cardona, Tom Petch, Juergen Schoenwaelder, Richard Woundy, Tony Jeffree and William Murwin. We also received input and feedback from IEEE confirming that the values 0 and 4095 are not used for identifying a specific VLAN-ID and so can be used to represent none or a wildcard (see Appendix A).

7. References

7.1 Normative References

[IEEE.802-1Q.2003]
Institute of Electrical and Electronics Engineers, "IEEE Std 802.1Q 2003 Edition, Virtual Bridged Local Area Networks", IEEE Standard 802.1D, 2003 Edition, May 2003.

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

[RFC2579] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., McCloghrie, K., Rose, M. and S. Waldbusser, "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.

7.2 Informative References

[I-D.ietf-ipcdn-qos-mib]
Patrick, M. and W. Murwin, "Data Over Cable System Interface Specification Quality of Service Management Information Base (DOCSIS-QOS MIB)", draft-ietf-ipcdn-qos-mib-10 (work in progress), September 2004.

[I-D.ietf-rmonmib-sspm-mib]
Kalbfleisch, C., Cole, R. and D. Romascanu, "Definition of Managed Objects for Synthetic Sources for Performance Monitoring Algorithms.", draft-ietf-rmonmib-sspm-mib-12 (work in progress), June 2004.

[RFC2613] Waterman, R., Lahaye, B., Romascanu, D. and S. Waldbusser, "Remote Network Monitoring MIB Extensions for Switched Networks Version 1.0", RFC 2613, June 1999.

[RFC2674] Bell, L., Smith, A., Langille, P., Rijhsinghani, A. and K. McCloghrie, "Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions", RFC 2674, August 1999.

[RFC3318] Sahita, R., Hahn, S., Chan, K. and K. McCloghrie, "Framework Policy Information Base", RFC 3318, March 2003.

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

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Appendix A. Email from Tony Jeffrey from IEEE

-----Original Message-----
From: Tony Jeffree [mailto:tony@jeffree.co.uk]
Sent: Friday, 6th of June 2003 17:16
To: Wijnen, Bert (Bert) [mailto:bwijnen@lucent.com]
Subject: RE: VLAn ID

Bert et al -

We have concluded that the use of 4095 as a wildcard is acceptable to 802.1, and we will make any necessary changes to 802.1Q in due course to relax the current stated restriction. However, we need to know whether that is all that needs to be done to 802.1Q - i.e., is there any need to change our definitions of the managed objects in the document (Clause 12) to reflect the interpretation of 4095 as a wildcard, or is this simply an issue for the SNMP machinery to handle?

Regards,
Tony

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Acknowledgment

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