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February 2006

Definitions for Textual Conventions and OBJECT-IDENTITIES
for Pseudo-Wires Management

draft-ietf-pwe3-pw-tc-mib-07.txt

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Abstract

This memo defines a Management Information Base (MIB) module
Which contains Textual Conventions to represent commonly used
Pseudo Wire (PW) management information. The intent is that these
TEXTUAL CONVENTIONS (TCs) will be imported and used in PW related
MIB modules that would otherwise define their own representations.
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1 Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines Textual Conventions used for Pseudo Wire (PW) technology and PWE3 MIB modules.

This document adopts the definitions, acronyms and mechanisms described in [RFC3985]. Unless otherwise stated, the mechanisms of [RFC3985] apply and will not be re-described here.

Comments should be made directly to the PWE3 mailing list at pwe3@ietf.org.

For an introduction to the concepts of Pseudo-Wires, see [PWREQ] and [RFC3985].

Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

2 Terminology

This document uses terminology from the document describing the PW architecture [RFC3985].
3 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].

4 Object Definition

PW-TC-STD-MIB DEFINITIONS ::= BEGIN

IMPORTS
  MODULE-IDENTITY, Unsigned32, transmission
  FROM SNMPv2-SMI               -- [RFC2578]

  TEXTUAL-CONVENTION
  FROM SNMPv2-TC;               -- [RFC2579]

pwTcStdMIB MODULE-IDENTITY
  LAST-UPDATED "200507121200Z"  -- 12 July 2005 12:00:00 GMT
  ORGANIZATION "Pseudo Wire Edge to Edge Emulation (PWE3) Working Group"

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  The PWE3 Working Group (email distribution pwe3@ietf.org,
  http://www.ietf.org/html.charters/pwe3-charter.html)

" DESCRIPTION

"Copyright (C) The Internet Society (2006). The initial version of this MIB module was published in RFC XXXX. For full legal notices see the RFC -- RFC Editor: Please replace XXXX with RFC number & remove this -- note.

    itself or see:
    http://www.ietf.org/copyrights/ianamib.html

This MIB module defines TEXTUAL-CONVENTIONs

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for concepts used in Pseudo Wire Edge-to-Edge networks.

-- Revision history.

REVISION "200507121200Z"  -- 12 July 2005 12:00:00 GMT
DESCRIPTION "Initial version published as part of RFC YYYY."
-- RFC Editor: please replace YYYY value, and
-- delete this note.
  ::= { transmission XXXX }
-- RFC Editor: please replace XXXX with IANA assigned value, and
-- delete this note.

PwGroupID ::= TEXTUAL-CONVENTION
  STATUS    current
  DESCRIPTION
    "An administrative identification mechanism for grouping a
    set of service-specific pseudo-wire services. May only
    have local significance."
  SYNTAX  Unsigned32

PwIDType ::= TEXTUAL-CONVENTION
  STATUS    current
  DESCRIPTION
    "Pseudo-Wire Identifier. Used to identify the PW
    (together with some other fields) in the signaling
    session. Zero if the PW is set-up manually."
  SYNTAX  Unsigned32

PwIndexType ::= TEXTUAL-CONVENTION
  STATUS    current
  DESCRIPTION
    "Pseudo Wire Index. Locally unique index for indexing
    several MIB tables associated with a particular PW."
  SYNTAX  Unsigned32

PwVlanCfg ::= TEXTUAL-CONVENTION
  STATUS    current
  DESCRIPTION
    "VLAN configuration for Ethernet PW.
    Values between 0 to 4095 indicate the actual VLAN field
    value.
    A value of 4096 indicates that the object refer to
    untagged frames, i.e. frames without 802.1Q field.
    A value of 4097 indicates that the object is not
    relevant."
  SYNTAX  Unsigned32 (0..4097)

PwOperStatusTC ::= TEXTUAL-CONVENTION
  STATUS    current
  DESCRIPTION

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"Indicates the operational status of the PW.

- up(1): Ready to pass packets.
- down(2): If PW signaling has not yet finished, or indications available at the service level indicate that the PW is not passing packets.
- testing(3): If AdminStatus at the PW level is set to test.
- dormant(4): The PW is not available because the required resources are occupied by higher priority PWs.
- notPresent(5): Some component is missing to accomplish the set up of the PW.
- lowerLayerDown(6): The underlying PSN or outer tunnel is not in OperStatus 'up' state.

SYNTAX INTEGER {
  up(1),
  down(2),
  testing(3),
  unknown(4),
  dormant(5),
  notPresent(6),
  lowerLayerDown(7)
}

PwAttachmentIdentifierType ::= TEXTUAL-CONVENTION
  STATUS current
  DESCRIPTION "An octet string used in the generalized FEC element for identifying attachment forwarder and groups. The NULL identifier is of zero length.

  SYNTAX OCTET STRING (SIZE (0..255))

PwCwStatusTC ::= TEXTUAL-CONVENTION
  STATUS current
  DESCRIPTION "Indicates the status of the control word negotiation based on the local configuration and the indications received from the peer node.

  waitingForNextMsg(1) indicates that the node is waiting for another label mapping from the peer.

  sentWrongBitErrorCode(2) indicates that the local node has notified the peer about mismatch in the C bit.

  rxWithdrawWithWrongBitErrorCode(3) indicates that a withdraw message has been received with the wrong C-bit error code."
illegalReceivedBit(4) indicates a C bit configuration with the peer which is not compatible with the PW type.

cwPresent(5) indicates that the CW is present for this PW: if signaling is used - C bit is set and agreed between the nodes, and for manual configured PW the local configuration require the use of the CW.

cwNotPresent(6) indicates that the CW is not present for this PW: if signaling is used - C bit is reset and agreed between the nodes, and for manual configured PW the local configuration requires that CW would not be used.

notYetKnown(7) indicates that a label mapping has not yet received from the peer.

"SYNTAX    INTEGER {
    waitingForNextMsg (1),
    sentWrongBitErrorCode (2),
    rxWithdrawWrongBitErrorCode (3),
    illegalReceivedBit (4),
    cwPresent (5),
    cwNotPresent (6),
    notYetKnown (7)
}"

PwCapabilities ::= TEXTUAL-CONVENTION
    STATUS    current
    DESCRIPTION
        "Indicates the optional capabilities of the control protocol. A value of zero indicates the basic LDP PW signaling.
        Values may be added in the future based on new capabilities introduced in IETF documents."

"SYNTAX    BITS {
    pwStatusIndication (0)
}"

PwStatus ::= TEXTUAL-CONVENTION
    STATUS    current
    DESCRIPTION
        "The status of the PW and the interfaces affecting this PW. If none of the bits are set, it indicate no faults are reported."

"SYNTAX    BITS {
    pwNotForwarding (0),
    customerFacingPwRxFault (1),
    customerFacingPwTxFault (2),
    psnFacingPwRxFault (3),
    "
psnFacingPwTxFault (4)

PwFragSize ::= TEXTUAL-CONVENTION
  STATUS current
  DESCRIPTION
  "If set to value other than zero, it indicates desired fragmentation to the value set. If set to zero, fragmentation is not desired for PSN bound packets."
  SYNTAX Unsigned32

PwFragStatus ::= TEXTUAL-CONVENTION
  STATUS current
  DESCRIPTION
  "The status of the fragmentation process based on local configuration and the peer capability.

  noFrag(0) bit indicates that local configuration is for no fragmentation.

  cfgFragGreaterThanPsnMtu(1) bit indicates the local desire to fragment, but the fragmentation size desired is greater than the MTU available at the PSN between the nodes.Fragmentation is not done in this case.

  cfgFragButRemoteIncapable(2) bit indicates that the local configuration indicates the desire for fragmentation but the peer is not capable of fragmentation.

  cfgFragFcsLengthMismatch(3) bit indicates that there is a mismatch between the FCS size between the local configuration and the peer configuration.

  fragEnabled(4) bit indicates that both the local was configured for fragmentation and the peer has the capability to accept fragmented packets, and the FCS size is equal in both peers."
  SYNTAX BITS {
    noFrag (0),
    cfgFragGreaterThanPsnMtu (1),
    cfgFragButRemoteIncapable (2),
    remoteFragCapable (3),
    fragEnabled (4)
  }
END

5 Security Considerations
This module does not define any management objects. Instead, it
defines a set of textual conventions that may be used by other PWE3
MIB modules to define management objects.

Meaningful security considerations can only be written in the MIB
modules that define management objects. Therefore, this document
has no impact on the security of the Internet.

6  IANA considerations

The MIB module in this document uses the following IANA-assigned
OBJECT IDENTIFIER values recorded in the SMI Numbers registry:

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>OBJECT IDENTIFIER value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pwTcStdMIB</td>
<td>{ transmission XXXX }</td>
</tr>
</tbody>
</table>

Editor’s Note (to be removed prior to publication): the IANA is
requested to assign a value for "XXXX" under the ‘transmission’
subtree and to record the assignment in the SMI Numbers registry.
When the assignment has been made, the RFC Editor is asked to
replace "XXXX" (here and in the MIB module) with the assigned value
and to remove this note.

7  References

7.1  Normative References

[RFC3985]  Bryant, S., and Pate, P., "Pseudo Wire Emulation Edge-

1700, October 1994. See also: http://www.isi.edu/in-
notes/iana/assignments/smi-numbers

[IANAFamily]  Internet Assigned Numbers Authority (IANA), ADDRESS
FAMILY NUMBERS, (http://www.isi.edu/in-
notes/iana/assignments/address-family-numbers), for
MIB see:
ftp://ftp.isi.edu/mib/ianaaddressfamilynumbers.mib

Edge to Edge Emulation (PWE3)", work-in-progress.

[RFC2119]  Bradner, S., "Key words for use in RFCs to Indicate
7.2 Informative references


8 Author’s Addresses

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9 Full Copyright Statement

Nadeau et al Expires August 2006