Abstract

This memo defines an experimental portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it describes the textual conventions to be used in the various Pseudo Wire (PW) MIB modules.
2 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 in IETF PW and PW-related MIBs.

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

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

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 RFC-2119 [BCP14].

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

4 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].
5 Object Definition

PW-TC-DRAFT05-MIB DEFINITIONS ::= BEGIN

IMPORTS
  MODULE-IDENTITY, Unsigned32, Integer32, transmission
  FROM SNMPv2-SMI

  TEXTUAL-CONVENTION
  FROM SNMPv2-TC;

pwTCMIB MODULE-IDENTITY
  LAST-UPDATED "200406141200Z"  -- 14 June 2004 12:00:00 GMT
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The PWE3 Working Group (email distribution pwe3@ietf.org,
http://www.ietf.org/html.charters/pwe3-charter.html)
DESCRIPTION

"This MIB Module provides Textual Conventions and OBJECT-IDENTITY Objects to be used in networks implementing PW services.

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-- RFC Ed.: replace yyyy with actual RFC number & remove this note

-- Revision history.

REVISION "200406141200Z" -- 14 June 2004 12:00:00 GMT
DESCRIPTION " Changes from previous drafts:
- Update PW types based on new IANA draft -04.
- FCS Retention status has been updated to include FCS size mismatch.
"

REVISION "200402031200Z" -- 3 February 2004 12:00:00 GMT
DESCRIPTION " Changes from previous drafts:
- Change IANA request text.
- Change PwVcRemoteCwStatus to PwCwStatus and add two enum so the textual convention will indicate the full status of the CW negotiation including the final result.
"

REVISION "200311301200Z" -- 30 November 2003 12:00:00 GMT
DESCRIPTION " Changes from previous drafts:
- Removing non-necessary textual convention.
- Adapt description of main clause based on MIB boilerplate.
"

REVISION "200307281200Z" -- 28 July 2003 12:00:00 GMT
DESCRIPTION "Adding objects to cover new control draft.
Adapt VC types for current values in WG documents."

REVISION "200305011200Z" -- 1 May 2003 12:00:00 GMT
DESCRIPTION "Adding PwVcAttachmentIdentifierType,
Adapt VC types for current values in WG documents."

REVISION "200205281200Z" -- 28 May 2002 12:00:00 GMT
DESCRIPTION "Adding PwVcType, and enhance some descriptions."

REVISION "200201301200Z" -- 30 January 2002 12:00:00 GMT
DESCRIPTION "Adding PwVcVlanCfg, PwAddressType and PwOperStatus."

REVISION "200112201200Z" -- 20 Dec 2001 12:00:00 GMT
DESCRIPTION "Remove PwVcInstance"
REVISION "200107121200Z" -- 12 July 2001 12:00:00 GMT
DESCRIPTION "Initial version."

-- Please see the IANA Considerations Section.
-- The requested pwStdMIB subId is 1, e.g.
-- ::= { pwStdMIB 1 }

 ::= { pwStdMIB x }

pwStdMIB OBJECT IDENTIFIER

   -- This object identifier needs to be assigned by IANA.
   ::= ( transmission xxx )

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

PwVcIDType ::= 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

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

PwVcVlanCfg ::= 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    Integer32 (0..4097)
PwOperStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "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 VC is not passing packets.
- testing(3): If AdminStatus at the PW level is set to test.
- dormant(4): The PW is not available because of the required resources are occupied PW with 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)
}"

PwVcType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Indicates the PW type (i.e. the carried service).

" SYNTAX INTEGER {
    other(0),
    frameRelayDlci(1),
    atmAal5SduVcc(2),
    atmTransparent(3),
    ethernetTagged(4),
    ethernet(5),
    hdlc(6),
    ppp(7), -- old format
    cem(8), -- old format
    atmCellNto1Vcc(9),
    atmCellNto1Vpc(10),
    ipLayer2Transport(11),
    atmCell1to1Vcc(12),
    atmCell1to1Vpc(13),
    atmAal5PduVcc(14),
}"
frameRelayPortMode(15),
cep(16),
e1Satop(17),
t1Satop(18),
e3Satop(19),
t3Satop(20),
basicCesPsn(21),
basicTdmIp(22),
tdmCasCesPsn(23),
tdmCasTdmIp(24)
}

PwVcAttachmentIdentifierType ::= 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))

PwVcCwStatus ::= 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 remote.

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 remote 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
peers, 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 peers, and for manual configured PW the local
configuration requires that CW would not be used.
notYetKnown(7) indicate that a label mapping has not yet received from the peer.

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

PwVcCapabilities ::= 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)
}

PwVcStatus ::= 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)
}

PwVcFragSize ::= 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

PwVcFragStatus ::= TEXTUAL-CONVENTION
STATUS   current
DESCRIPTION
"The status of the fragmentation process based on local configuration and the remote 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 peers. Fragmentation is not done in this case.

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

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

fragEnabled(4) bit indicates that both the local was configured for fragmentation and the remote 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

6 Security Considerations

This module does not define any management objects. Instead, it defines a set of textual conventions which may be used by other MPLS 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.

7 IANA considerations

IANA is requested to make a MIB OID assignment under the transmission branch, that is, assign the pwStdMIB under
In the future, PWE3 related standards track PW modules should be rooted under the pwStdMIB subtree. The IANA is requested to manage that namespace. New assignments can only be made via a Standards Action as specified in [RFC2434].

This document also requests IANA to assign \{ pwStdMIB 1 \} to the PW MIB specified in this document.

8 References

8.1 Normative References


8.2 Informative references


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