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Virtual Private Lan Services (VPLS) Management Information Base

[draft-ietf-l2vpn-vpls-mib-06.txt](#)

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This Internet-Draft will expire on Apr 27, 2012.

Abstract

This memo defines an experimental portion of the Management Information Base for use with network management protocols in the Internet community. In particular, it describes managed objects for modeling of Virtual Private LAN services. It needs to be used in conjunction with Pseudo Wire (PW) Management Information Base [[RFC5601](#)].

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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 a MIB module that can be used to manage VPLS(Virtual Private LAN Services for transmission over a packet Switched Network (PSN) using LDP [[RFC4762](#)] or BGP[RFC4761] signalling. This MIB module provides generic management of VPLS services as defined by the IETF L2VPN Working Group.

Comments should be made directly to the L2VPN mailing list at [l2vpf@ietf.org](mailto:l2vpf@ietf.org).

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](#)].

Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL

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## [2](#) Terminology

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.

## [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, [[RFC2578](#)], STD 58, [[RFC2579](#)] and STD 58, [[RFC2580](#)].

## 4 VPLS MIB Module Architecture

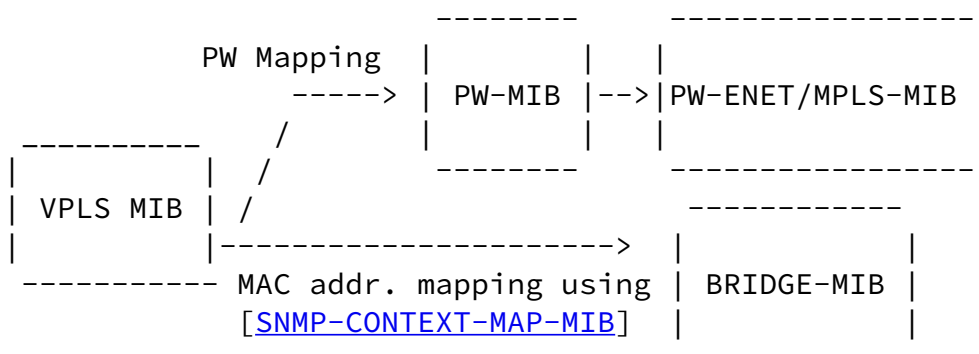
The MIB structure for defining a VPLS service is composed from four types of MIB modules.

The first type is the VPLS-GENERIC-DRAFT-01-MIB module, which configures general parameters of the VPLS service that are common to all types of emulated services.

The second type is the VPLS-LDP-DRAFT-01-MIB module, which configures VPLS-LDP[RFC4762] specific parameters of the VPLS service.

The third type is the VPLS-BGP-DRAFT-01-MIB module, which configures VPLS-BGP[RFC4761] specific parameters of the VPLS service.

The fourth type of modules are service-specific modules, which are defined in other documents.



### 4.1 VPLS-GENERIC-DRAFT-01-MIB Module Usage

An entry in the `vplsConfigTable` MUST exist for a VPLS service. This table holds generic parameters which apply to a VPLS service which can be signalled via LDP or BGP.

A conceptual row can be created in the `vplsConfigTable` in one of the following ways:

- 1) The operator creates a row in the `vplsConfigTable` when configuring the node for a new service. This mode **MUST** be supported by the agent, and **MUST** be used when creating a manually assigned VPLS service.
- 2) The agent **MAY** create a row in the `vplsConfigTable` automatically due to some auto discovery application, or based on configuration that is done through non-SNMP applications. This mode is **OPTIONAL**.

An entry in the `vplsPwBindTable` **MUST** exist for a VPLS service. This binding table links one VPLS service with one or many

pseudo wires (defined in [[RFC5601](#)]). The pseudo wire may be used as a spoke or a mesh based on the parameters defined in this table.

An entry in the `vplsBgpAdConfigTable` **MUST** exist if Auto-discovery has been enabled on this service. This table stores the information required for auto-discovery.

An entry in the `vplsBgpRteTargetTable` **MUST** exist if auto-discovery has been configured on this service. One service can import and export multiple Route targets.

The agent then creates the rows in the (locally supported) performance tables and reverse mapping tables in VPLS-GENERIC-DRAFT-01-MIB module.

#### [4.2](#) VPLS-LDP-DRAFT-01-MIB Module Usage

An entry in the `vplsLdpConfigTable` **MUST** be created by the agent for a VPLS service signalled using LDP.

#### [4.3](#) VPLS-BGP-DRAFT-01-MIB Module Usage

An entry in the `vplsBgpConfigTable` **MUST** be created by the agent for a VPLS service signalled using BGP.

#### [4.4](#) Relations to other MIB modules

- The vplsPwBindTable links the VPLS entry to various entries in the [\[RFC5601\]](#)
- The association of MAC addresses to VPLS entries is possible by adding a turnstile function to interpret the entries in [\[SNMP-CONTEXT-MAP-MIB\]](#). In [\[SNMP-CONTEXT-MAP-MIB\]](#) there is a mapping between the vacmContextName[RFC3415] to dot1dBasePort[RFC4188] and vplsConfigIndex. This mapping can be used to map the vplsConfigIndex to a dot1dBasePort in the BRIDGE-MIB. This resulting value of dot1dBasePort can be used to access corresponding MAC addresses that belong to a particular vplsConfigIndex.
- Unless all the necessary entries in the applicable tables have been created and all the parameters have been consistently configured in those tables, signaling cannot be performed from the local node, and the ??? should report 'notPresent'.
- Statistics can be gathered from the [\[RFC5601\]](#) - TBD

## 5 Example of the VPLS MIB modules usage

In this section we provide an example of using the MIB objects described in [section 7](#) to set up a VPLS service over MPLS. While this example is not meant to illustrate every permutation of the MIB, it is intended as an aid to understanding some of the key concepts. It is meant to be read after going through the MIB itself.

In the VPLS-GENERIC-DRAFT-01-MIB module:

In vplsConfigTable:

```
{
    vplsConfigIndex          10,
    vplsConfigName           "VPLS-A"
    vplsConfigAdminStatus    1(up),
    vplsConfigMacLearning    1(true),
    vplsConfigDiscardUnknownDest 2(false),
    vplsConfigMacAging       1(true),
```

```

        vplsConfigVpnId          "100:10"
        vplsConfigRowStatus      1(active)
    }

```

In vplsStatusTable:

```

{
    vplsStatusOperStatus          1(up),
}

```

In the VPLS-LDP-DRAFT-01-MIB module:

In vplsLdpConfigTable:

```

{
    vplsLdpConfigMacAddrWithdraw  1(true),

}

```

In vplsLdpPwBindTable:

```

{
    vplsLdpPwBindType              1(mesh),
    vplsLdpPwBindMacAddressLimit    100
}

```

## [6](#) Object definitions

### [6.1](#) VPLS-GENERIC-DRAFT-01-MIB

This MIB module makes references to the following documents.

[[RFC2578](#)], [[RFC2579](#)], [[RFC2580](#)], [[RFC3411](#)],  
 [[RFC2863](#)], [[RFC4001](#)], [[RFC4265](#)] and [[RFC3813](#)].

VPLS-GENERIC-DRAFT-01-MIB DEFINITIONS ::= BEGIN

IMPORTS

NOTIFICATION-TYPE, MODULE-IDENTITY, OBJECT-TYPE,  
 Unsigned32, Counter32, transmission  
 FROM SNMPv2-SMI -- [RFC2578](#)

MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP

```

FROM SNMPv2-CONF                                -- RFC2580

TruthValue, RowStatus, StorageType
FROM SNMPv2-TC                                    -- RFC2579

SnmpAdminString
FROM SNMP-FRAMEWORK-MIB                          -- RFC3411

PwIndexType
FROM PW-TC-STD-MIB

VPNIdOrZero
FROM VPN-TC-STD-MIB                              -- RFC4265

-- Vpls BGP Autodiscovery specific Textual Convention
VplsBgpRouteDistinguisher ::= TEXTUAL-CONVENTION
STATUS          current
DESCRIPTION
    "Syntax for a route distinguisher. For a complete
     definition of a route distinguisher, see [RFC4364].
     For more details on use of a route distinguisher
     for a VPLS service, see [RFC4761]"
REFERENCE
    "[RFC4364]"
SYNTAX  OCTET STRING(SIZE (0..256))

VplsBgpRouteTarget ::= TEXTUAL-CONVENTION
STATUS          current
DESCRIPTION
    "Syntax for a route target. For a complete
     definition of a route target, see [RFC4364]."
REFERENCE
    "[RFC4364]"
SYNTAX  OCTET STRING(SIZE (0..256))

VplsBgpRouteTargetType ::= TEXTUAL-CONVENTION
STATUS          current

```

```

DESCRIPTION
    "Used to define the type of a route target usage.
     Route targets can be specified to be imported,

```



exported, or both. For a complete definition of a route target, see [[RFC4364](#)]."

#### REFERENCE

"[[RFC4364](#)]"

SYNTAX INTEGER { import(1), export(2), both(3) }

;

#### vpplsGenericDraft01MIB MODULE-IDENTITY

LAST-UPDATED "200608301200Z" -- 30 Aug 2006 12:00:00 GMT

ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)  
Working Group"

#### CONTACT-INFO

"

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Email: [tnadeau@cisco.com](mailto:tnadeau@cisco.com)

The L2VPN Working Group (email distribution [l2vpn@ietf.org](mailto:l2vpn@ietf.org),  
<http://www.ietf.org/html.charters/l2vpn-charter.html>)

"

#### DESCRIPTION

"Copyright (C) The IETF Trust (2011). The initial version of this MIB module was published in RFC XXXX.

-- RFC Editor: Please replace XXXX with RFC number & remove  
-- this note.

For full legal notices see the RFC itself or see:  
<http://www.ietf.org/copyrights/ianamib.html>

This MIB module contains generic managed object definitions for Virtual Private LAN Services as in [[RFC4762](#)] and [[RFC4761](#)]

This MIB module enables the use of any underlying PseudoWire network."

-- Revision history.

#### REVISION

"200608301200Z" -- 30 August 2006 12:00:00 GMT

#### DESCRIPTION

"Changes from previous version:

- 1) Moved LDP Specific information to VPLS-LDP-DRAFT-01-MIB
- 2) Created the vpplsStatusTable to store status information.
- 3)

```
"
REVISION
    "200606041200Z" -- 4 June 2006 12:00:00 GMT

DESCRIPTION "Initial version published as part of RFC YYYY."
-- RFC Editor: please replace YYYY with IANA assigned value, and
-- delete this note.

    ::= { transmission XXXX }

-- RFC Editor: please replace XXXX with IANA assigne value, and
-- delete this note.

-- Top-level components of this MIB.

-- Notifications
vplsNotifications OBJECT IDENTIFIER
                    ::= { vplsGenericDraft01MIB 0 }
-- Tables, Scalars
vplsObjects        OBJECT IDENTIFIER
                    ::= { vplsGenericDraft01MIB 1 }
-- Conformance
vplsConformance    OBJECT IDENTIFIER
                    ::= { vplsGenericDraft01MIB 2 }

-- PW Virtual Connection Table

vplsConfigIndexNext OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS       read-only
    STATUS           current
    DESCRIPTION
        "This object contains an appropriate value to be used
        for vplsConfigIndex when creating entries in the
        vplsConfigTable. The value 0 indicates that no
        unassigned entries are available. To obtain the
        value of vplsConfigIndex for a new entry in the
        vplsConfigTable, the manager issues a management
        protocol retrieval operation to obtain the current
        value of vplsConfigIndex. After each retrieval
        operation, the agent should modify the value to
        reflect the next unassigned index. After a manager
        retrieves a value the agent will determine through
        its local policy when this index value will be made
        available for reuse."
```

::= { vplsObjects 1 }

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vplsConfigTable OBJECT-TYPE

SYNTAX SEQUENCE OF VplsConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table specifies information for configuring  
and monitoring Virtual Private Lan Services(VPLS).  
"

::= { vplsObjects 2 }

vplsConfigEntry OBJECT-TYPE

SYNTAX VplsConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A row in this table represents a Virtual Private Lan  
Service(VPLS) in a packet network. It is indexed by  
vplsConfigIndex, which uniquely identifies a single VPLS.

A row is created by the operator or by the agent if a  
VPLS service is created by non-SNMP application or  
due to autodiscovery process.

None of the read-create objects values can be  
changed when vplsConfigRowStatus is in the active(1)  
state. Changes are allowed when the vplsConfigRowStatus  
is in notInService(2) or notReady(3) states only.  
If the operator need to change one of the values  
for an active row the vplsConfigRowStatus should be  
first changed to notInService(2), the objects may  
be changed now, and later to active(1) in order to  
re-initiate the signaling process with the new  
values in effect.  
"

INDEX { vplsConfigIndex }

::= { vplsConfigTable 1 }

VplsConfigEntry ::=

SEQUENCE {	
vplsConfigIndex	Unsigned32,
vplsConfigName	SnmpAdminString,
vplsConfigDescr	SnmpAdminString,
vplsConfigAdminStatus	INTEGER,
vplsConfigMacLearning	TruthValue,
vplsConfigDiscardUnknownDest	TruthValue,
vplsConfigMacAging	TruthValue,
vplsConfigFwdFullHighWatermark	Unsigned32,
vplsConfigFwdFullLowWatermark	Unsigned32,

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vplsConfigRowStatus	RowStatus,
vplsConfigMtu	Unsigned32,
vplsConfigVpnId	VPNIidOrZero,
vplsConfigServiceType	INTEGER,
vplsConfigStorageType	StorageType
}	

vplsConfigIndex OBJECT-TYPE

SYNTAX Unsigned32 (1.. 2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Unique index for the conceptual row identifying a VPLS service."

::= { vplsConfigEntry 1 }

vplsConfigName OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"A textual name of the VPLS.

If there is no local name, or this object is otherwise not applicable, then this object MUST contain a zero-length octet string."

DEFVAL { "" }

::= { vplsConfigEntry 2 }

vplsConfigDescr OBJECT-TYPE

SYNTAX SnmpAdminString

```

MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "A textual string containing information about the
    VPLS service. If there is no information for this VPLS
    service, then this object MUST contain a zero-length
    octet string."
DEFVAL          { "" }
::= { vplsConfigEntry 3 }

vplsConfigAdminStatus OBJECT-TYPE
    SYNTAX      INTEGER {
                    up(1),
                    down(2),
                    testing(3)  -- in some test mode
                }
    MAX-ACCESS  read-create

```

```

STATUS          current
DESCRIPTION
    "The desired administrative state of the VPLS
    service. If the administrative status of the
    Vpls service is changed to enable then this
    service is able to utilize the pseudo wire to
    perform the tasks of a VPLS service.
    The testing(3) state indicates that no operational
    packets can be passed. "
DEFVAL          { down }
::= { vplsConfigEntry 4 }

vplsConfigMacLearning OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This object specifies if MAC Learning is enabled
        in this service. If this object is true then Mac
        Learning is enabled. If false, then Mac Learning is
        disabled."
    DEFVAL      { true }

```

```

 ::= { vplsConfigEntry 6 }

vplsConfigDiscardUnknownDest OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "If the value of this object is 'true', then frames
         received with an unknown destination MAC are discarded
         in this VPLS. If 'false', then the packets are
         processed."
    DEFVAL          { false }
 ::= { vplsConfigEntry 7 }

vplsConfigMacAging OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "If the value of this object is 'true'
         then the MAC ageing process is enabled in
         this VPLS. If 'false', then the MAC ageing process
         is disabled"
    DEFVAL          { true }
 ::= { vplsConfigEntry 8 }

```

```

vplsConfigFwdFullHighWatermark OBJECT-TYPE
    SYNTAX          Unsigned32 (0..100)
    UNITS           "percentage"
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This object specifies the utilization of the
         forwarding database for this VPLS instance at
         which the vplsFwdFullAlarmRaised notification
         will be sent."
    DEFVAL          { 95 }
 ::= { vplsConfigEntry 10 }

```

```

vplsConfigFwdFullLowWatermark OBJECT-TYPE

```

SYNTAX            Unsigned32 (0..100)  
 UNITS            "percentage"  
 MAX-ACCESS       read-create  
 STATUS           current  
 DESCRIPTION  
     "This object specifies the utilization of the  
     forwarding database for this VPLS instance  
     at which the vplsFwdFullAlarmCleared  
     notification will be sent."  
 DEFVAL           { 90 }  
 ::= { vplsConfigEntry 11 }

vplsConfigRowStatus OBJECT-TYPE  
 SYNTAX           RowStatus  
 MAX-ACCESS       read-create  
 STATUS           current  
 DESCRIPTION  
     "For creating, modifying, and deleting this row.  
     None of the read-create objects in the  
     conceptual rows may be changed when this  
     object is in the active(1) state."  
 ::= { vplsConfigEntry 12 }

vplsConfigMtu OBJECT-TYPE  
 SYNTAX           Unsigned32 (64..1518)  
 MAX-ACCESS       read-create  
 STATUS           current  
 DESCRIPTION  
     "The value of this object specifies the MTU of this  
     vpls instance."  
 DEFVAL           { 1518 }  
 ::= { vplsConfigEntry 13 }

vplsConfigVpnId OBJECT-TYPE

SYNTAX            VPNIIdOrZero  
 MAX-ACCESS       read-only  
 STATUS           current  
 DESCRIPTION  
     "This objects indicates the IEEE 802-1990  
     VPN ID of the associated VPLS service."

```

-- Ed note: Should we import the VPNIdOrZero TC or
--           define a new TC?
::= { vplsConfigEntry 14 }

vplsConfigServiceType OBJECT-TYPE
    SYNTAX          INTEGER {
                        vlan      (1),
                        ethernet  (2)
                    }
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The value of this object specifies the type of
        service emulated by this vpls instance."
    DEFVAL          { vlan }
    ::= { vplsConfigEntry 15 }

vplsConfigStorageType OBJECT-TYPE
    SYNTAX          StorageType
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This variable indicates the storage type for this row."
    DEFVAL { volatile }
    ::= { vplsConfigEntry 16 }

-- VPLS Status table

vplsStatusTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VplsStatusEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table provides information for monitoring
        Virtual Private Lan Services(VPLS).
        "
    ::= { vplsObjects 3 }

vplsStatusEntry OBJECT-TYPE
    SYNTAX          VplsStatusEntry
    MAX-ACCESS      not-accessible
    STATUS          current

```



DESCRIPTION

"A row in this table represents a Virtual Private Lan Service(VPLS) in a packet network. It is indexed by vplsConfigIndex, which uniquely identifies a single VPLS.

A row in this table is automatically created by the agent when a VPLS service is configured.

"

INDEX { vplsConfigIndex }  
::= { vplsStatusTable 1 }

VplsStatusEntry ::=

SEQUENCE {  
    vplsStatusOperStatus INTEGER,  
    vplsStatusPeerCount Counter32  
}

vplsStatusOperStatus OBJECT-TYPE

SYNTAX INTEGER {  
    other(0),  
    up(1),  
    down(2)  
}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The current operational state of this VPLS Service."

::= { vplsStatusEntry 1 }

vplsStatusPeerCount OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This objects specifies the number of peers present in this vpls instance."

::= { vplsStatusEntry 2 }

-- VPLS PW Binding Table

vplsPwBindTable OBJECT-TYPE

SYNTAX SEQUENCE OF VplsPwBindEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table provides an association between a VPLS service and the corresponding Pseudo

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Wires. A service can have more than one Pseudo Wire association. Pseudo Wires are defined in the pwTable"

```
::= { vplsObjects 4 }
```

vplsPwBindEntry OBJECT-TYPE

SYNTAX VplsPwBindEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each row represents an association between a VPLS instance and one or more Pseudo Wires defined in the pwTable. Each index is unique in describing an entry in this table. However both indexes are required to define the one to many association of service to pseudowire."

INDEX { vplsConfigIndex, vplsPwBindIndex }

```
::= { vplsPwBindTable 1 }
```

VplsPwBindEntry ::=

SEQUENCE {

vplsPwBindConfigType	INTEGER,
vplsPwBindType	INTEGER,
vplsPwBindRowStatus	RowStatus,
vplsPwBindStorageType	StorageType

}

vplsPwBindConfigType OBJECT-TYPE

SYNTAX INTEGER {  
manual (1),  
autodiscovery (2)  
}

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The value of this object indicates whether the Pseudo Wire binding was created manually or via autodiscovery.

The value of this object must be

specified when the row is created and cannot  
be changed while the row status is active(1)"  
::= { vplsPwBindEntry 1 }

vplsPwBindType OBJECT-TYPE  
SYNTAX INTEGER {  
mesh (1),

spoke (2)  
}  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"The value of this object indicates  
whether the Pseudo Wire binding is of  
type mesh or spoke.  
  
The value of this object must be  
specified when the row is created and cannot  
be changed while the row status is active(1)"  
::= { vplsPwBindEntry 2 }

vplsPwBindRowStatus OBJECT-TYPE  
SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"For creating, modifying, and deleting this row.  
None of the read-create objects in the  
conceptual rows may be changed when this  
object is in the active(1) state"  
::= { vplsPwBindEntry 3 }

vplsPwBindStorageType OBJECT-TYPE  
SYNTAX StorageType  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"This variable indicates the storage type for this row."  
DEFVAL { volatile }  
::= { vplsPwBindEntry 4 }

-- vplsBgpADConfigTable

```
vplsBgpADConfigTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VplsBgpADEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table specifies information for configuring
        BGP Auto-discovery parameters for a given Vpls service.
        "
    ::= { vplsObjects 5 }
```

```
vplsBgpADConfigEntry OBJECT-TYPE
    SYNTAX          VplsBgpADConfigEntry
```

```
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "A row in this table represents BGP based autodiscovery
    is in use for this instance of Vpls.
    A row in this table is indexed by vplsConfigIndex, which
    uniquely identifies a single VPLS.
    None of the read-create objects can be changed when
    vplsBGPADConfigRowStatus is in active(1) state. Changes
    are allowed when the vplsBGPADConfigRowStatus is in
    notInService(2) or notReady(3) states only.
    If the operator need to change one of the values
    for an active row the vplsConfigRowStatus should be
    first changed to notInService(2), the objects may
    be changed now, and later to active(1) in order to
    re-initiate the signaling process with the new
    values in effect.
    "
INDEX          { vplsConfigIndex }
::= { vplsBgpADConfigTable 1 }
```

```
VplsBgpADConfigEntry ::=
    SEQUENCE {
        vplsBgpADConfigRouteDistinguisher    VplsBgpRouteDistinguisher,
        vplsBgpADConfigPrefix                Unsigned32,
```

vplsBgpADConfigVplsId	VplsBgpRouteDistinguisher,
vplsBgpADConfigRowStatus	RowStatus

```

}

vplsBgpADConfigRouteDistinguisher OBJECT-TYPE
    SYNTAX          VplsBgpRouteDistinguisher
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        " The route distinguisher for this VPLS. See [RFC4364]
        for a complete definition of a route distinguisher.
        for more details on use of a route distinguisher
        for a VPLS service, see [RFC4761]
        "
        ::= { vplsBgpADConfigEntry 1 }

vplsBgpADConfigPrefix      OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        " In case of auto-discovery the default prefix advertised
        is the ip address of the loopback. In case the user wants

```

```

to override the loopback address, vplsBgpADConfigPrefix
should be set. When this value is non-zero it is used
as the advertised IP address in the NLRI.
"

```

```

DEFVAL { 0 }
::= { vplsBgpADConfigEntry 2 }

```

```

vplsBgpADConfigVplsId      OBJECT-TYPE
    SYNTAX          VplsBgpRouteDistinguisher
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        " VplsId is a unique identifier for all VSIs belonging to
        the same VPLS. It is advertised as an extended community
        "
        ::= { vplsBgpADConfigEntry 3 }

```

```

vplsBgpADConfigRowStatus OBJECT-TYPE
    SYNTAX          RowStatus
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
    " For creating, modifying, and deleting this row.
      None of the read-create objects in the
      conceptual rows may be changed when this
      object is in the active(1) state.
    "
    ::= { vplsBgpADConfigEntry 4 }

-- vplsBgpRteTargetTable

vplsBgpRteTargetTable  OBJECT-TYPE
    SYNTAX          SEQUENCE Of VplsBgpRteTargetEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
    " This table specifies the list of Route Targets
      imported or exported by BGP during auto-discovery of VPLS.
    "
    ::= { vplsObjects 5 }

vplsBgpRteTargetEntry  OBJECT-TYPE
    SYNTAX          VplsBgpRteTargetEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
    "An entry in this table specifies the value of the

```

```

    Route Target being used by BGP. Depending on the value
    of vplsBgpRteTargetType an RT might be exported or
    imported or both. Every VPLS which
    uses auto-discovery for finding peer nodes can import and
    export multiple Route Targets. This representation allows
    support for hierarchical VPLS.
    "
    INDEX          { vplsConfigIndex, vplsBgpRteTargetIndex }
    ::= { vplsBgpRteTargetTable 1 }

```

```

VplsBgpRteTargetEntry ::=
    SEQUENCE {
        vplsBgpRteTargetIndex          Unsigned32,
        vplsBgpRteTargetRTType         VplsBgpRouteTargetType,
        vplsBgpRteTargetRT             VplsBgpRouteTarget,
        vplsBgpRteTargetRTRowStatus    RowStatus
    }

vplsBgpRteTargetIndex    OBJECT-TYPE
    SYNTAX                Unsigned32
    MAX-ACCESS             not-accessible
    STATUS                 current
    DESCRIPTION
        "This index along with vplsConfigIndex, identifies one entry
        in the vplsBgpRteTargetTable. By keeping vplsConfigIndex
        constant and using new value of vplsBgpRteTargetIndex user
        can configure multiple Route Targets for the same Vpls.
        "
    ::= { vplsBgpADConfigEntry 1 }

vplsBgpRteTargetRTType  OBJECT-TYPE
    SYNTAX                VplsBgpRouteTargetType
    MAX-ACCESS             read-create
    STATUS                 current
    DESCRIPTION
        " Used to define the type of a route target usage.
        Route targets can be specified to be imported,
        exported, or both. For a complete definition of a
        route target, see [RFC4364]."
        "
    ::= { vplsBgpADConfigEntry 2 }

vplsBgpRteTargetRT      OBJECT-TYPE
    SYNTAX                VplsBgpRouteTarget
    MAX-ACCESS             read-create
    STATUS                 current
    DESCRIPTION
        " The route target associated with the VPLS service.

```

```

        for a VPLS service, see [RFC4761]
    "
    ::= { vplsBgpADConfigEntry 3 }

vplsBgpRteTargetRowStatus      OBJECT-TYPE
    SYNTAX          RowStatus
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This variable is used to create, modify, and/or
        delete a row in this table.  When a row in this
        table is in active(1) state, no objects in that row
        can be modified
    "
    ::= { vplsBgpADConfigEntry 4 }

vplsStatusNotifEnable  OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-write
    STATUS          current
    DESCRIPTION
        "If this object is set to true(1), then it enables
        the emission of vplsStatusChanged
        notification; otherwise this notification is not
        emitted."
    REFERENCE
        "See also [RFC3413] for explanation that
        notifications are under the ultimate control of the
        MIB module in this document."
    DEFVAL { false }
    ::= { vplsObjects 7 }

vplsNotificationMaxRate OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-write
    STATUS          current
    DESCRIPTION
        "This object indicates the maximum number of
        notifications issued per second.  If events occur
        more rapidly, the implementation may simply fail to
        emit these notifications during that period, or may
        queue them until an appropriate time.  A value of 0
        means no throttling is applied and events may be
        notified at the rate at which they occur."
    DEFVAL          { 0 }
    ::= { vplsObjects 8 }

```



-- VPLS Service Notifications

vplsStatusChanged NOTIFICATION-TYPE

OBJECTS {

    vplsConfigVpnId,  
    vplsConfigAdminStatus,  
    vplsStatusOperStatus

}

STATUS                current

DESCRIPTION

    "The vplsStatusChanged notification is generated  
    when there is a change in the administrative or  
    operating status of a VPLS service."

::= { vplsNotifications 1 }

vplsFwdFullAlarmRaised NOTIFICATION-TYPE

OBJECTS {

    vplsConfigVpnId,  
    vplsConfigFwdFullHighWatermark,  
    vplsConfigFwdFullLowWatermark

}

STATUS                current

DESCRIPTION

    "The vplsFwdFullAlarmRaised notification is  
    generated when the utilization of the Forwarding  
    database is above the value specified by  
    vplsConfigFwdFullHighWatermark."

::= { vplsNotifications 2 }

vplsFwdFullAlarmCleared NOTIFICATION-TYPE

OBJECTS {

    vplsConfigVpnId,  
    vplsConfigFwdFullHighWatermark,  
    vplsConfigFwdFullLowWatermark

}

STATUS                current

DESCRIPTION

    "The vplsFwdFullAlarmCleared notification is  
    generated when the utilization of the Forwarding  
    database is below the value specified by  
    vplsConfigFwdFullLowWatermark."

::= { vplsNotifications 3 }

-- Compliance requirement for read-only implementations.

```
vplsCompliances
  OBJECT IDENTIFIER ::= { vplsConformance 1 }
```

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```
vplsModuleFullCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "Compliance requirement for implementations that
    provide full support for VPLS-GENERIC-DRAFT-01-MIB.
    Such devices can then be monitored and configured using
    this MIB module."
  MODULE -- this module

    MANDATORY-GROUPS {
      vplsGroup,
      vplsPwBindGroup,
      vplsNotificationGroup
    }

  ::= { vplsCompliances 1 }
```

```
vplsModuleReadOnlyCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "Compliance requirement for implementations that only
    provide read-only support for VPLS-GENERIC-DRAFT-01-MIB.
    Such devices can then be monitored but cannot be
    configured using this MIB modules."

  MODULE -- this module

    MANDATORY-GROUPS {
      vplsGroup,
      vplsPwBindGroup,
      vplsNotificationGroup
    }

    OBJECT          vplsConfigName
    MIN-ACCESS      read-only
    DESCRIPTION
```

"Write access is not required."

OBJECT vplsConfigDescr  
MIN-ACCESS read-only  
DESCRIPTION  
"Write access is not required."

OBJECT vplsConfigAdminStatus  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT vplsConfigMacLearning  
MIN-ACCESS read-only  
DESCRIPTION  
"Write access is not required."

OBJECT vplsConfigDiscardUnknownDest  
MIN-ACCESS read-only  
DESCRIPTION  
"Write access is not required."

OBJECT vplsConfigMacAging  
MIN-ACCESS read-only  
DESCRIPTION  
"Write access is not required."

OBJECT vplsConfigFwdFullHighWatermark  
MIN-ACCESS read-only  
DESCRIPTION

"Write access is not required."

OBJECT vplsConfigFwdFullLowWatermark  
MIN-ACCESS read-only  
DESCRIPTION  
"Write access is not required."

OBJECT vplsConfigRowStatus

```

MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsConfigMtu
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsConfigServiceType
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsPwBindConfigType
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

```

```

OBJECT          vplsPwBindType
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsPwBindRowStatus
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

```

```

::= { vplsCompliances 2 }

```

-- Units of conformance.

```

vplsGroups
    OBJECT IDENTIFIER ::= { vplsConformance 2 }

vplsGroup OBJECT-GROUP
    OBJECTS {
        vplsConfigName,

```

```

    vplsConfigDescr,
    vplsConfigAdminStatus,
    vplsConfigMacLearning,
    vplsConfigDiscardUnknownDest,
    vplsConfigMacAging,
    vplsConfigVpnId,
    vplsConfigFwdFullHighWatermark,
    vplsConfigFwdFullLowWatermark,
    vplsConfigRowStatus,
    vplsConfigIndexNext,
    vplsConfigMtu,
    vplsConfigServiceType,
    vplsConfigStorageType,

    vplsStatusOperStatus,
    vplsStatusPeerCount,

    vplsStatusNotifEnable,
    vplsNotificationMaxRate
}
STATUS          current
DESCRIPTION
    "The group of objects supporting
      management of L2VPN VPLS services"
::= { vplsGroups 1 }

```

vplsPwBindGroup OBJECT-GROUP

```

OBJECTS {
    vplsPwBindConfigType,
    vplsPwBindType,
    vplsPwBindRowStatus,
    vplsPwBindStorageType
}
STATUS          current
DESCRIPTION
    "The group of objects supporting
      management of
      Pseudo Wire (PW) Binding to VPLS."
::= { vplsGroups 2 }

```

```

vplsNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS {
        vplsStatusChanged,
        vplsFwdFullAlarmRaised,
        vplsFwdFullAlarmCleared
    }
    STATUS current
    DESCRIPTION
        "The group of notifications supporting
        the Notifications generated for
        VPLS Services"
    ::= { vplsGroups 3 }

END

```

## [6.2](#) VPLS-LDP-DRAFT-01-MIB Object definitions

This MIB module makes references to the following documents.  
[\[RFC2578\]](#), [\[RFC2579\]](#), [\[RFC2580\]](#), [\[RFC3411\]](#),  
[\[RFC2863\]](#), [\[RFC4001\]](#), [\[RFC4265\]](#) and [\[RFC3813\]](#).

```

VPLS-LDP-DRAFT-01-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY, OBJECT-TYPE,
    Unsigned32, transmission
        FROM SNMPv2-SMI                                -- RFC2578

    MODULE-COMPLIANCE, OBJECT-GROUP
        FROM SNMPv2-CONF                                -- RFC2580

    TruthValue
        FROM SNMPv2-TC                                  -- RFC2579

```

```

vplsConfigIndex, vplsPwBindIndex
    FROM VPLS-GENERIC-DRAFT-01-MIB;

vplsLdpDraft01MIB MODULE-IDENTITY
    LAST-UPDATED "200608301200Z" -- 20 August 2006 12:00:00 GMT

```

ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)  
Working Group"

CONTACT-INFO

"

Thomas D. Nadeau  
Email: tnadeau@cisco.com

The L2VPN Working Group (email distribution l2vpn@ietf.org,  
<http://www.ietf.org/html.charters/l2vpn-charter.html>)

"

DESCRIPTION

"Copyright (C) The IETF Trust (2011). The initial  
version of this MIB module was published in RFC XXXX.

-- RFC Editor: Please replace XXXX with RFC number & remove  
-- this note.

For full legal notices see the RFC itself or see:  
<http://www.ietf.org/copyrights/ianamib.html>

This MIB module contains managed object definitions for  
LDP signalled Virtual Private LAN Services as in  
[RFC4762]

This MIB module enables the use of any underlying PseudoWire  
network. "

-- Revision history.

REVISION

"200608301200Z" -- 30 Aug 2006 12:00:00 GMT

DESCRIPTION "Initial version published as part of RFC YYYY."

-- RFC Editor: please replace YYYY with IANA assigned value, and  
-- delete this note.

::= { transmission XXXX }

-- RFC Editor: please replace XXXX with IANA assigne value, and  
-- delete this note.

-- Top-level components of this MIB.

```

-- Notifications
vplsLdpNotifications OBJECT IDENTIFIER
                        ::= { vplsLdpDraft01MIB 0 }

-- Tables, Scalars
vplsLdpObjects        OBJECT IDENTIFIER
                        ::= { vplsLdpDraft01MIB 1 }

-- Conformance
vplsLdpConformance    OBJECT IDENTIFIER
                        ::= { vplsLdpDraft01MIB 2 }

vplsLdpConfigTable OBJECT-TYPE
    SYNTAX             SEQUENCE OF VplsLdpConfigEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "This table specifies information for configuring
        and monitoring LDP specific parameters for
        Virtual Private Lan Services(VPLS)."
    ::= { vplsLdpObjects 1 }

vplsLdpConfigEntry OBJECT-TYPE
    SYNTAX             VplsLdpConfigEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "A row in this table represents LDP specific information
        for Virtual Private Lan Service(VPLS) in a packet network.
        It is indexed by vplsConfigIndex, which uniquely
        identifies a single VPLS.

        A row is automatically created when a VPLS service is
        configured using LDP signalling.

        None of the read-create objects values can be
        changed when vplsRowStatus is in the active(1)
        state. Changes are allowed when the vplsRowStatus
        is in notInService(2) or notReady(3) states only.
        If the operator need to change one of the values
        for an active row the vplsConfigRowStatus should be
        first changed to notInService(2), the objects may
        be changed now, and later to active(1) in order to
        re-initiate the signaling process with the new
        values in effect.
        "
    INDEX              { vplsConfigIndex }
    ::= { vplsLdpConfigTable 1 }

```



---

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```
VplsLdpConfigEntry ::=
    SEQUENCE {
        vplsLdpConfigMacAddrWithdraw          TruthValue
    }

vplsLdpConfigMacAddrWithdraw OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This object specifies if MAC address withdrawal
        is enabled in this service. If this object is true then
        Mac address withdrawl Learning is enabled. If false,
        then Mac Learning is disabled."
    DEFVAL          { true }
    ::= { vplsLdpConfigEntry 1 }

-- VPLS LDP PW Binding Table

vplsLdpPwBindTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VplsLdpPwBindEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table provides LDP specific information for
        an association between a VPLS service and the
        corresponding Pseudo Wires. A service can have more
        than one Pseudo Wire association. Pseudo Wires are
        defined in the pwTable."
    ::= { vplsLdpObjects 2 }

vplsLdpPwBindEntry OBJECT-TYPE
    SYNTAX          VplsLdpPwBindEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "Each row represents an association between a
        VPLS instance and one or more Pseudo Wires
        defined in the pwTable. Each index is unique
        in describing an entry in this table. However
```

both indexes are required to define the one to many association of service to pseudowire.

An entry in this table is instantiated only when LDP signalling is used to configure VPLS service.

Each entry in this table provides LDP specific information for the VPLS represented by

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```
        vplsConfigIndex."
INDEX   { vplsConfigIndex, vplsPwBindIndex }
 ::= { vplsLdpPwBindTable 1 }

VplsLdpPwBindEntry ::=
    SEQUENCE {
        vplsLdpPwBindMacAddressLimit      Unsigned32
    }

vplsLdpPwBindMacAddressLimit OBJECT-TYPE
    SYNTAX      Unsigned32 (0.. 4294967295)
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The value of this object specifies the maximum number
         of learned and static entries allowed in the
         Forwarding database for this PW Binding. The value 0
         means there is no limit for this PW Binding."
    DEFVAL      { 0 }
    ::= { vplsLdpPwBindEntry 1 }

-- VPLS Ldp Service Notifications

vplsLdpPwBindMacTableFull NOTIFICATION-TYPE
    OBJECTS {
        vplsConfigIndex,
        vplsPwBindIndex
    }
    STATUS       current
    DESCRIPTION
        "The vplsLdpPwBindMacTableFull notification is generated
         when the number of learned MAC-Addresses increases to
```

```
        the value specified in vplsLdpPwBindMacAddressLimit."
 ::= { vplsLdpNotifications 1 }
```

```
-- Compliance requirement for read-only implementations.
```

```
vplsLdpCompliances
```

```
    OBJECT IDENTIFIER ::= { vplsLdpConformance 1 }
```

```
vplsLdpModuleFullCompliance MODULE-COMPLIANCE
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Compliance requirement for implementations that
        provide full support for VPLS-LDP-DRAFT-01-MIB.
        Such devices can then be monitored and configured using
```

```
        this MIB module."
```

```
MODULE -- this module
```

```
    MANDATORY-GROUPS {
        vplsLdpGroup,
        vplsLdpNotificationGroup
    }
```

```
 ::= { vplsLdpCompliances 1 }
```

```
vplsLdpModuleReadOnlyCompliance MODULE-COMPLIANCE
```

```
    STATUS current
```

```
    DESCRIPTION
```

```
        "Compliance requirement for implementations that only
        provide read-only support for VPLS-LDP-DRAFT-01-MIB.
        Such devices can then be monitored but cannot be
        configured using this MIB modules."
```

```
MODULE -- this module
```

```
    MANDATORY-GROUPS {
        vplsLdpGroup,
```

```

        vplsLdpNotificationGroup
    }

    OBJECT          vplsLdpConfigMacAddrWithdraw
    MIN-ACCESS      read-only
    DESCRIPTION
        "Write access is not required."

    OBJECT          vplsLdpPwBindMacAddressLimit
    MIN-ACCESS      read-only
    DESCRIPTION
        "Write access is not required."

    ::= { vplsLdpCompliances 2 }

-- Units of conformance.

vplsLdpGroups
    OBJECT IDENTIFIER ::= { vplsLdpConformance 2 }

vplsLdpGroup OBJECT-GROUP
    OBJECTS {
        vplsLdpConfigMacAddrWithdraw,
        vplsLdpPwBindMacAddressLimit
    }

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```

---

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```

    }
    STATUS          current
    DESCRIPTION
        "The group of objects supporting
         management of L2VPN VPLS services using LDP."
    ::= { vplsLdpGroups 1 }

vplsLdpNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS {
        vplsLdpPwBindMacTableFull
    }
    STATUS          current
    DESCRIPTION
        "The group of notifications supporting
         the Notifications generated for
         VPLS Ldp Service"

```

```
::= { vplsLdpGroups 2 }
```

END

### [6.3](#) VPLS-BGP-DRAFT-01-MIB Object definitions

```
VPLS-BGP-DRAFT-01-MIB DEFINITIONS ::= BEGIN

IMPORTS
MODULE-IDENTITY, OBJECT-TYPE,
    Unsigned32, transmission
    FROM SNMPv2-SMI                                -- RFC2578

MODULE-COMPLIANCE, OBJECT-GROUP
    FROM SNMPv2-CONF                                -- RFC2580

RowStatus, StorageType, TEXTUAL-CONVENTION
    FROM SNMPv2-TC                                  -- RFC2579

Snmplib
    FROM SNMP-FRAMEWORK-MIB                        -- RFC3411

vplsConfigIndex, vplsPwBindIndex
    FROM VPLS-GENERIC-DRAFT-01-MIB

;

vplsBgpDraft01MIB MODULE-IDENTITY
    LAST-UPDATED "200612061200Z" -- 06 Dec 2006 12:00:00 GMT
    ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)
                  Working Group"
    CONTACT-INFO
```

L2 VPN Working Group

Expires Apr 2012

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Oct 27, 2011

"

V. J. Shah  
Email: [vshah@juniper.net](mailto:vshah@juniper.net)

The L2VPN Working Group (email distribution [l2vpn@ietf.org](mailto:l2vpn@ietf.org),  
<http://www.ietf.org/html.charters/l2vpn-charter.html>)

"

DESCRIPTION

"Copyright (C) The IETF Trust (2011). The initial  
version of this MIB module was published in RFC XXXX.  
-- RFC Editor: Please replace XXXX with RFC number & remove  
-- this note.

For full legal notices see the RFC itself or see:  
<http://www.ietf.org/copyrights/ianamib.html>

This MIB module contains managed object definitions for  
BGP signalled Virtual Private LAN Services as in  
[[RFC4761](#)]

This MIB module enables the use of any underlying PseudoWire  
network. "

-- Revision history.  
REVISION  
    "200612061200Z" -- 06 Dec 2006 12:00:00 GMT  
DESCRIPTION "Initial version published as part of RFC YYYY."  
-- RFC Editor: please replace YYYY with IANA assigned value, and  
-- delete this note.  
    ::= { transmission XXXX }  
-- RFC Editor: please replace XXXX with IANA assigned value, and  
-- delete this note.  
  
-- VPLS BGP specific Textual Conventions.  
VplsBgpRouteDistinguisher ::= TEXTUAL-CONVENTION  
    STATUS          current  
    DESCRIPTION  
        "Syntax for a route distinguisher. For a complete  
        definition of a route distinguisher, see [[RFC4364](#)].  
        For more details on use of a route distinguisher  
        for a VPLS service, see [[RFC4761](#)]"  
    REFERENCE  
        "[[RFC4364](#)]"  
    SYNTAX  OCTET STRING(SIZE (0..256))

VplsBgpRouteTarget ::= TEXTUAL-CONVENTION  
    STATUS          current  
    DESCRIPTION

"Syntax for a route target. For a complete definition of a route target, see [[RFC4364](#)]."

REFERENCE

"[[RFC4364](#)]"

SYNTAX OCTET STRING(SIZE (0..256))

-- Top-level components of this MIB.

-- Tables, Scalars

vpplsBgpObjects OBJECT IDENTIFIER  
::= { vpplsBgpDraft01MIB 1 }

-- Conformance

vpplsBgpConformance OBJECT IDENTIFIER  
::= { vpplsBgpDraft01MIB 2 }

-- Vpls Bgp Config Table

vpplsBgpConfigTable OBJECT-TYPE

SYNTAX SEQUENCE OF VplsBgpConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table specifies information for configuring and monitoring BGP specific parameters for Virtual Private Lan Services(VPLS)."

::= { vpplsBgpObjects 1 }

vpplsBgpConfigEntry OBJECT-TYPE

SYNTAX VplsBgpConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A row in this table represents BGP specific information for Virtual Private Lan Service(VPLS) in a packet network. It is indexed by vpplsConfigIndex, which uniquely identifies a single instance of a VPLS service.

A row is automatically created when a VPLS service is configured using BGP signalling.

None of the read-create objects values can be changed when vpplsRowStatus is in the active(1) state. Changes are allowed when the vpplsRowStatus is in notInService(2) or notReady(3) states only. If the operator need to change one of the values for an active row the vpplsConfigRowStatus should be first changed to notInService(2), the objects may be changed now, and later to active(1) in order to

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```
    re-initiate the signaling process with the new
    values in effect.
```

```
    "
```

```
    INDEX          { vplsConfigIndex }
    ::= { vplsBgpConfigTable 1 }
```

```
VplsBgpConfigEntry ::=
    SEQUENCE {
        vplsBgpConfigVERangeSize      Unsigned32
    }
```

```
vplsBgpConfigVERangeSize  OBJECT-TYPE
    SYNTAX      Unsigned32 (0..65535)
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Specifies the size of the range of VE ids in this
        VPLS service. This number controls the size of the
        label block advertised for this VE by the PE.
        A value of 0 indicates that the range is not
        configured and the PE derives the range value
        from received advertisements from other PEs."
    DEFVAL      { 0 }
    ::= { vplsBgpConfigEntry 1 }
```

```
-- Vpls Edge Device (VE) Identifier Table
```

```
vplsBgpVETable OBJECT-TYPE
    SYNTAX      SEQUENCE OF VplsBgpVEEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "This table associates VPLS Edge devices to a VPLS service"
    ::= { vplsBgpObjects 2 }
```

```
vplsBgpVEEntry OBJECT-TYPE
    SYNTAX      VplsBgpVEEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "An entry in this table is created for each VE Id
        configured on a PE for a particular VPLS service"
```



```

        instance."
INDEX { vplsConfigIndex, vplsBgpVEId }
 ::= { vplsBgpVETable 1 }

VplsBgpVEEntry ::= SEQUENCE {
    vplsBgpVEId          Unsigned32,

```

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```

    vplsBgpVEName          SnmpAdminString,
    vplsBgpVEPreference    Unsigned32,
    vplsBgpVERowStatus     RowStatus,
    vplsBgpVEStorageType   StorageType
}

vplsBgpVEId OBJECT-TYPE
    SYNTAX          Unsigned32 (1..65535)
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "A secondary index identifying a VE within an
         instance of a VPLS service."
    ::= { vplsBgpVEEntry 1 }

vplsBgpVEName OBJECT-TYPE
    SYNTAX          SnmpAdminString
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "Descriptive name for the site or u-PE associated with
         this VE Id."
    DEFVAL { "" }
    ::= { vplsBgpVEEntry 2 }

vplsBgpVEPreference OBJECT-TYPE
    SYNTAX          Unsigned32 (0..65535)
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "Specifies the preference of the VE Id on this PE
         if the site is multi-homed and VE Id is re-used."
    DEFVAL          { 0 }
    ::= { vplsBgpVEEntry 3 }

```

```

vplsBgpVERowStatus OBJECT-TYPE
    SYNTAX          RowStatus
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This variable is used to create, modify, and/or
        delete a row in this table.  When a row in this
        table is in active(1) state, no objects in that row
        can be modified except vplsBgpSiteRowStatus."
    ::= { vplsBgpVEEntry 5 }

```

```

vplsBgpVEStorageType OBJECT-TYPE
    SYNTAX          StorageType

```

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```

    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "This variable indicates the storage type for this row."
    DEFVAL { volatile }
    ::= { vplsBgpVEEntry 6 }

```

-- VPLS BGP PW Binding Table

```

vplsBgpPwBindTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VplsBgpPwBindEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table provides BGP specific information for
        an association between a VPLS service and the
        corresponding Pseudo Wires. A service can have more
        than one Pseudo Wire association. Pseudo Wires are
        defined in the pwTable."
    ::= { vplsBgpObjects 3 }

```

```

vplsBgpPwBindEntry OBJECT-TYPE
    SYNTAX          VplsBgpPwBindEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION

```

"Each row represents an association between a VPLS instance and one or more Pseudo Wires defined in the pwTable. Each index is unique in describing an entry in this table. However both indexes are required to define the one to many association of service to pseudowire.

An entry in this table is instantiated only when BGP signalling is used to configure VPLS service.

Each entry in this table provides BGP specific information for the VPLS represented by vplsConfigIndex."

```
INDEX { vplsConfigIndex, vplsPwBindIndex }  
::= { vplsBgpPwBindTable 1 }
```

```
VplsBgpPwBindEntry ::=   
    SEQUENCE {  
        vplsBgpPwBindLocalVEId      Unsigned32,  
        vplsBgpPwBindRemoteVEId     Unsigned32  
    }
```

```
vplsBgpPwBindLocalVEId  OBJECT-TYPE  
    SYNTAX                Unsigned32 (1..65535)  
    MAX-ACCESS             read-only  
    STATUS                 current  
    DESCRIPTION  
        "Identifies the local VE that this Pseudo Wire  
         is associated with."  
    ::= { vplsBgpPwBindEntry 1 }  
  
vplsBgpPwBindRemoteVEId OBJECT-TYPE  
    SYNTAX                Unsigned32 (1..65535)  
    MAX-ACCESS             read-only  
    STATUS                 current  
    DESCRIPTION  
        "Identifies the remote VE that this Pseudo Wire  
         is associated with."  
    ::= { vplsBgpPwBindEntry 2 }
```

```
-- Compliance requirement for read-only implementations.

vplsBgpCompliances
  OBJECT IDENTIFIER ::= { vplsBgpConformance 1 }

vplsBgpModuleFullCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "Compliance requirement for implementations that
    provide full support for VPLS-BGP-DRAFT-01-MIB.
    Such devices can then be monitored and configured using
    this MIB module."

  MODULE -- this module

    MANDATORY-GROUPS {
      vplsBgpConfigGroup,
      vplsBgpVEGroup,
      vplsBgpPwBindGroup
    }
  ::= { vplsBgpCompliances 1 }

vplsBgpModuleReadOnlyCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "Compliance requirement for implementations that only
    provide read-only support for VPLS-BGP-DRAFT-01-MIB.
    Such devices can then be monitored but cannot be
    configured using this MIB modules."
```

```
MODULE -- this module

  MANDATORY-GROUPS {
    vplsBgpConfigGroup,
    vplsBgpVEGroup,
    vplsBgpPwBindGroup
  }

  OBJECT          vplsBgpConfigRouteDistinguisher
```

```

MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsBgpConfigRouteTarget
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsBgpConfigVERangeSize
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsBgpVEName
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsBgpVEPreference
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

OBJECT          vplsBgpVERowStatus
MIN-ACCESS      read-only
DESCRIPTION
    "Write access is not required."

```

```
 ::= { vplsBgpCompliances 2 }
```

```
-- Units of conformance.
```

```

vplsBgpGroups
  OBJECT IDENTIFIER ::= { vplsBgpConformance 2 }

vplsBgpConfigGroup OBJECT-GROUP
  OBJECTS {

```

```

    vplsBgpConfigVERangeSize
  }

```

```

STATUS          current
DESCRIPTION
    "The group of objects supporting configuration
      of L2VPN VPLS services using BGP"
 ::= { vplsBgpGroups 1 }

vplsBgpVEGroup OBJECT-GROUP
OBJECTS {
    vplsBgpVEName,
    vplsBgpVEPreference,
    vplsBgpVERowStatus,
    vplsBgpVEStorageType
}
STATUS          current
DESCRIPTION
    "The group of objects supporting management of VPLS
      Edge devices for L2VPN VPLS services using BGP"
 ::= { vplsBgpGroups 2 }

vplsBgpPwBindGroup OBJECT-GROUP
OBJECTS {
    vplsBgpPwBindLocalVEId,
    vplsBgpPwBindRemoteVEId
}
STATUS          current
DESCRIPTION
    "The group of objects supporting management of
      Pseudo Wires for L2VPN VPLS services using BGP"
 ::= { vplsBgpGroups 3 }

END

```

## 7. Security Considerations

It is clear that the MIB modules described in this document in association with the PW-STD-MIB [[RFC5601](#)] are potentially useful for monitoring of GMPLS LSRs. These MIB modules can also be used for configuration of certain objects, and anything that can be configured can be incorrectly configured, with potentially disastrous results.

There are a number of management objects defined in these MIB modules with a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on

network operations. These are the tables and objects and their sensitivity/vulnerability:

## 8. IANA Considerations

-- (Note to RFC-Editor:)  
-- We request that you assign contiguous RFC numbers to the  
-- IANA is requested to root MIB objects in the MIB module  
-- contained in this document under the transmission subtree.  
--

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## [10](#) Acknowledgement

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