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Virtual Private Lan Services (VPLS) Management Information Base

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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 Pseudowire (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](#)] signaling. This MIB module provides generic management of VPLS services as defined by the IETF L2VPN Working Group. Additional MIB modules are also defined for management of LDP VPLS and BGP VPLS services as defined by the IETF L2VPN Working Group.

[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.

[2.1. 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](#)].

[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 set of MIB modules that are compliant to the SMIv2, which is described in STD 58 [[RFC2578](#)][[RFC2579](#)][[RFC2580](#)].

[4. VPLS MIB Module Architecture](#)

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The MIB structure for defining a VPLS service is composed from three MIB modules.

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

The second is the VPLS-LDP-MIB module, which configures VPLS-LDP [[RFC4762](#)] specific parameters of the VPLS service.

The third is the VPLS-BGP-MIB module, which configures VPLS-BGP [[RFC4761](#)] specific parameters of the VPLS service.

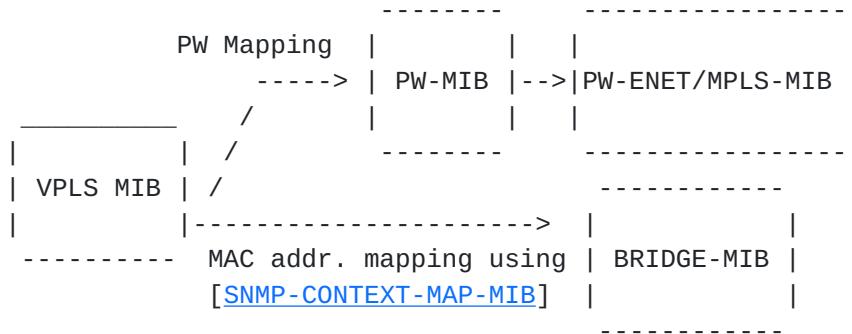


Figure A

Additionally service-specific modules may be defined in other documents.

4.1. VPLS-GENERIC-MIB Module Usage

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

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

- 1) An NMS creates a row in the vplsConfigTable using SNMP Set requests which causes the node to create and start a new VPLS service. The agent MUST support the creation of VPLS services in this way.
- 2) The agent MAY create a row in the vplsConfigTable automatically due to some auto discovery application, or based on

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configuration that is done through non-SNMP applications.
This mode is OPTIONAL.

At least one entry in the vplsPwBindTable MUST exist for each VPLS service.

This binding table links one VPLS service with one or many pseudowires (defined in [[RFC5601](#)]). Each pseudowire may be used as a spoke or as part of a mesh based on the parameters defined in this table.

For each VPLS service, an entry in the vplsBgpAdConfigTable MUST exist if Auto-discovery has been enabled for that service.
This table stores the information required for auto-discovery.

For each VPLS service, at least one entry in the vplsBgpRteTargetTable MUST exist if auto-discovery has been configured for that service. One service can import and export multiple Route Targets.

4.2. VPLS-LDP-MIB Module Usage

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

4.3. VPLS-BGP-MIB Module Usage

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

4.4. Relations to other MIB modules

- The vplsPwBindTable links the VPLS entry to the pwTable in [[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

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from the local node, and the vplsConfigRowStatus should report 'notReady'.

- Statistics can be gathered from the Pseudowire performance tables in [[RFC5601](#)]

[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 this example a VPLS service (VPLS-A) is setup using LDP for signaling the pseudowire. The binding between the VPLS service and the pseudowire is reflected in the VplsPwBindTable.

The pseudowire configuration is defined in [RFC 5601](#).

In the VPLS-GENERIC-MIB module:

Row 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)
}
```

Row in vplsStatusTable:

```
{
    vplsStatusOperStatus      1(up),
    vplsStatusPeerCount       1
}
```

Row in VplsPwBindTable :

```
{
    vplsPwBindConfigType      manual,
    vplsPwBindType             spoke,
    vplsPwBindRowStatus        1(active),
    vplsPwBindStorageType      volatile
}
```

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In the VPLS-LDP-MIB module:

Row in vplsLdpConfigTable:

```
{
    vplsLdpConfigMacAddrWithdraw          1(true),  

}  
}
```

Row in vplsLdpPwBindTable:

```
{
    vplsLdpPwBindType                  1(mesh),  

    vplsLdpPwBindMacAddressLimit      100
}
```

6. Object definitions

6.1. VPLS-GENERIC-MIB

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

```
VPLS-GENERIC-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, TEXTUAL-CONVENTION  
    FROM SNMPv2-TC                         -- RFC2579  
  
SnmpAdminString  
    FROM SNMP-FRAMEWORK-MIB                -- RFC3411  
  
pwIndex  
    FROM PW-STD-MIB  
  
VPNIdOrZero  
    FROM VPN-TC-STD-MIB                   -- RFC4265
```

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;

vplsGenericDraft01MIB MODULE-IDENTITY
-- RFC Editor: Please replace vplsGenericDraft01MIB with
-- vplsGenericMIB throughout the MIB and remove
-- this note.

LAST-UPDATED "201302221200Z" -- 22 Feb 2013 12:00:00 GMT
ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)
Working Group"

CONTACT-INFO

"

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

"

DESCRIPTION

"Copyright (C) The IETF Trust (2013). 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 define in [[RFC4762](#)] and
[[RFC4761](#)]

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

-- Revision history.

REVISION

"201302221200Z" -- 22 Feb 2013 12:00:00 GMT

DESCRIPTION

- 1) Changed the OID for vplsBgpRteTargetTable from vplsObjects.6 to vplsObjects.5
- 2) Index to VplsPwBindTable is now pwIndex, not vplsPwBindIndex.
- 3) vplsConfigMtu increased to 9192
- 4) Default value for vplsConfigStorageType changed to nonvolatile.
- 5) vplsConfigServiceType should be a property of each PW. Deleting this object and adjusting the corresponding object indexes."

REVISION

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

DESCRIPTION

"Changes from previous version:
1) Moved LDP Specific information to VPLS-LDP-MIB
2) Created the vplsStatusTable to store status information.
"

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 assigned value, and
-- delete this note.

-- VPLS BGP Auto-Discovery 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

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```
"[RFC4364]"
SYNTAX      INTEGER { import(1), export(2), both(3) }

-- 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 }

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 }
```

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```

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 via SNMP or by the agent if a
        VPLS service is created by a non-SNMP application or
        due to the Auto-Discovery process.

        All of the read-create objects values except
        vplsConfigSignalingType can be changed when
        vplsConfigRowStatus is in the active(1)
        state. Changes for vplsConfigSignalingType are only allowed
        when the vplsConfigRowStatus is in notInService(2) or
        notReady(3) states.
        "
INDEX          { vplsConfigIndex }
 ::= { vplsConfigTable 1 }

VplsConfigEntry ::=

SEQUENCE {
    vplsConfigIndex                      Unsigned32,
    vplsConfigName                       SnmpAdminString,
    vplsConfigDescr                      SnmpAdminString,
    vplsConfigAdminStatus                INTEGER,
    vplsConfigMacLearning               TruthValue,
    vplsConfigDiscardUnknownDest        TruthValue,
    vplsConfigMacAging                 Unsigned32,
    vplsConfigFwdFullHighWatermark      Unsigned32,
    vplsConfigFwdFullLowWatermark       Unsigned32,
    vplsConfigRowStatus                 RowStatus,
    vplsConfigMtu                       Unsigned32,
    vplsConfigVpnId                     VPNIIdOrZero,
    vplsConfigStorageType               StorageType,
    vplsConfigSignalingType             INTEGER
}

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 enabled then this
         service is able to utilize pseudowires to
         perform the tasks of a VPLS service.
         The testing(3) state indicates that no operational
         packets can be passed. "
```

DEFVAL

{ down }

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```
 ::= { 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 aging process is enabled in
         this VPLS. If 'false', then the MAC aging 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."

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```
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.

        All other objects in this row must be set to valid
        values before this object can be set to active(1).

        None of the read-create objects in the
        conceptual rows may be changed when this
        object is in the active(1) state.

        If this object is set to destroy(6) or deleted by the
        agent, all associated entries in the vplsPWBindTable,
        vplsBGPRteTargetTable and vplsBgpVETable shall be
        deleted."
 ::= { vplsConfigEntry 12 }

vplsConfigMtu OBJECT-TYPE
    SYNTAX      Unsigned32 (64..9192)
    MAX-ACCESS  read-create
    STATUS     current
    DESCRIPTION
        "The value of this object specifies the MTU of this
         vpls instance. This can be used to limit the MTU to a
         value lower than the MTU supported by the associated
         Pseudowires"
    DEFVAL      { 1518 }
 ::= { vplsConfigEntry 13 }
```

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```

vplsConfigVpnId OBJECT-TYPE
    SYNTAX          VPNIIdOrZero
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "This objects indicates the IEEE 802-1990
         VPN ID of the associated VPLS service."
    ::= { vplsConfigEntry 14 }

vplsConfigStorageType OBJECT-TYPE
    SYNTAX          StorageType
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "This variable indicates the storage type for this row."
    DEFVAL { nonVolatile }
    ::= { vplsConfigEntry 15 }

vplsConfigSignalingType OBJECT-TYPE
    SYNTAX          INTEGER {
                    ldp(1),
                    bgp(2),
                    none(3)
                    }
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Desired signaling type of the VPLS service.

        If the value of this object is ldp(1), then a
        corresponding entry in vplsLdpConfigTable is required.

        If the value of this object is bgp(2), then a
        corresponding entry in vplsBgpConfigTable is required.

        If the value of this object is none(3), then it
        indicates a static configuration of PW labels."
    DEFVAL { none }
    ::= { vplsConfigEntry 16 }

-- VPLS Status table

vplsStatusTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VplsStatusEntry
    MAX-ACCESS     not-accessible
    STATUS         current

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```
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 first set to active.
    "
AUGMENTS          { vplsConfigEntry }
 ::= { 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
     (pseudowires) present in this VPLS instance."
 ::= { vplsStatusEntry 2 }
```

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-- 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 pseudowires.
        A service can have more than one pseudowire
        association. Pseudowires 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 a pseudowire
        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.
```

Entries in this table may be created or deleted through SNMP, as side-effects of console or other non-SNMP management commands, or upon learning via autodiscovery.

It is optional for the agent to allow entries to be created that point to non-existent entries in vplsConfigTable."

```
INDEX { vplsConfigIndex, pwIndex }
 ::= { vplsPwBindTable 1 }
```

```
VplsPwBindEntry :=
    SEQUENCE {
        vplsPwBindConfigType          INTEGER,
        vplsPwBindType                INTEGER,
        vplsPwBindRowStatus           RowStatus,
        vplsPwBindStorageType          StorageType
    }
```

```
vplsPwBindConfigType   OBJECT-TYPE
```

SYNTAX

INTEGER {

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```
                                manual      (1),
                                autodiscovery (2)
}
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The value of this object indicates
     whether the Pseudo Wire binding was created
     via SNMP/Console or via Auto-Discovery.

    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 pseudowire 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.

    All other objects in this row must be set to valid
    values before this object can be set to active(1).

    None of the read-create objects in the
    conceptual rows may be changed when this
    object is in the active(1) state.

    If autodiscovered entries are deleted they would
    likely re-appear in the next autodiscovery interval."

```

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```
::= { 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 VplsBgpADConfigEntry
    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 indicates that BGP based Auto-
        Discovery is in use for this instance of VPLS.
        A row in this table is indexed by vplsConfigIndex, which
        uniquely identifies a single VPLS.

        Entries in this table may be created or deleted
        through SNMP, as side-effects of console or other
        non-SNMP management commands, or upon learning via
        autodiscovery.

        All of the read-create objects can be changed when
        vplsBGPADConfigRowStatus is in active(1) state."

```

```

INDEX      { vplsConfigIndex }
 ::= { vplsBgpADConfigTable 1 }

VplsBgpADConfigEntry ::=

SEQUENCE {
    vplsBgpADConfigRouteDistinguisher  VplsBgpRouteDistinguisher,
    vplsBgpADConfigPrefix            Unsigned32,
    vplsBgpADConfigVplsId           VplsBgpRouteDistinguisher,
    vplsBgpADConfigRowStatus        RowStatus,
    vplsBgpADConfigStorageType     StorageType
}

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]. When not configured, the
value is derived from the lower 6 bytes of
vplsBgpADConfigVplsId.
"
 ::= { 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 this value is
used along with vplsBgpADConfigRouteDistinguisher in the
NLRI, see [RFC6074]
"
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

```

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```
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.  
  
All other objects in this row must be set to valid  
values before this object can be set to active(1).  
  
None of the read-create objects in the  
conceptual rows may be changed when this  
object is in the active(1) state."  
 ::= { vplsBgpADConfigEntry 4 }  
  
vplsBgpADConfigStorageType OBJECT-TYPE  
    SYNTAX          StorageType  
    MAX-ACCESS     read-create  
    STATUS         current  
    DESCRIPTION  
    "This variable indicates the storage type for this row."  
    DEFVAL { nonVolatile }  
    ::= { vplsBgpADConfigEntry 5 }  
  
-- 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 6 }  
  
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 a Route Target might be exported or
```

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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.

Entries in this table may be created or deleted through SNMP, as side-effects of console or other non-SNMP management commands, or upon learning via autodiscovery.

It is optional for the agent to allow entries to be created that point to non-existent entries in vplsConfigTable."

```
INDEX { vplsConfigIndex, vplsBgpRteTargetIndex }
::= { vplsBgpRteTargetTable 1 }
```

VplsBgpRteTargetEntry ::=

```
SEQUENCE {
    vplsBgpRteTargetIndex          Unsigned32,
    vplsBgpRteTargetRTType        VplsBgpRouteTargetType,
    vplsBgpRteTargetRT            VplsBgpRouteTarget,
    vplsBgpRteTargetRowStatus     RowStatus,
    vplsBgpRteTargetStorageType   StorageType
}
```

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 users can configure multiple Route
Targets for the same VPLS.
"
```

```
::= { vplsBgpRteTargetEntry 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]."
```

`::= { vplsBgpRteTargetEntry 2 }`

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```
vplsBgpRteTargetRT      OBJECT-TYPE
    SYNTAX          VplsBgpRouteTarget
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        " The route target associated with the VPLS service.
         For more details on use of route targets
         for a VPLS service, see [RFC4761]
    "
::= { vplsBgpRteTargetEntry 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.
```

All other objects in this row must be set to valid values before this object can be set to active(1).

When a row in this table is in active(1) state, no objects in that row can be modified.

If autodiscovered entries are deleted they would likely re-appear in the next autodiscovery interval."

```
::= { vplsBgpRteTargetEntry 4 }
```

```
vplsBgpRteTargetStorageType OBJECT-TYPE
    SYNTAX          StorageType
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "This variable indicates the storage type for this row."
    DEFVAL { volatile }
::= { vplsBgpRteTargetEntry 5 }
```

```
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
```

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```
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.  
  
The object instances included in the notification are  
the ones associated with the VPLS service whose  
status has changed."  
 ::= { vplsNotifications 1 }  
  
vplsFwdFullAlarmRaised NOTIFICATION-TYPE  
OBJECTS {  
    vplsConfigVpnId,  
    vplsConfigFwdFullHighWatermark,  
    vplsConfigFwdFullLowWatermark  
}
```

STATUS

current

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DESCRIPTION

"The vplsFwdFullAlarmRaised notification is generated when the utilization of the Forwarding database is above the value specified by vplsConfigFwdFullHighWatermark. The object instances included in the notification are the ones associated with the VPLS service which has exceeded the threshold."
 ::= { 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.

The object instances included in the notification are the ones associated with the VPLS service which has fallen below the threshold."

::= { vplsNotifications 3 }

-- Conformance Section

vplsCompliances

 OBJECT IDENTIFIER ::= { vplsConformance 1 }

-- Compliance requirement for fully compliant implementations

vplsModuleFullCompliance MODULE-COMPLIANCE

 STATUS current

DESCRIPTION

"Compliance requirement for implementations that provide full support for VPLS-GENERIC-MIB. Such devices can then be monitored and configured using this MIB module."

MODULE -- this module

MANDATORY-GROUPS {

 vplsGroup,
 vplsPwBindGroup,
 vplsNotificationGroup

}

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```
::= { vplsCompliances 1 }

-- Compliance requirement for read-only implementations.

vplsModuleReadOnlyCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "Compliance requirement for implementations that only
     provide read-only support for VPLS-GENERIC-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."
```

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```
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          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 }
```

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```
vplsGroup OBJECT-GROUP
    OBJECTS {
        vplsConfigName,
        vplsBgpADConfigRouteDistinguisher,
        vplsBgpRteTargetRTType,
        vplsBgpRteTargetRT,
        vplsBgpRteTargetRowStatus,
        vplsBgpRteTargetStorageType,
        vplsBgpADConfigPrefix,
        vplsBgpADConfigVplsId,
        vplsBgpADConfigRowStatus,
        vplsBgpADConfigStorageType,
        vplsConfigDescr,
        vplsConfigAdminStatus,
        vplsConfigMacLearning,
        vplsConfigDiscardUnknownDest,
        vplsConfigMacAging,
        vplsConfigVpnId,
        vplsConfigFwdFullHighWatermark,
        vplsConfigFwdFullLowWatermark,
        vplsConfigRowStatus,
        vplsConfigIndexNext,
        vplsConfigMtu,
        vplsConfigStorageType,
        vplsConfigSignalingType,
        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

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```

        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-MIB Object definitions](#)

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

```

VPLS-LDP-MIB DEFINITIONS ::= BEGIN

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

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

TruthValue
    FROM SNMPv2-TC                                 -- RFC2579
pwIndex, pwID
    FROM PW-STD-MIB

vplsConfigIndex, vplsConfigName
    FROM VPLS-GENERIC-MIB;

vplsLdpDraft01MIB MODULE-IDENTITY
-- RFC Editor: Please replace vplsLdpDraft01MIB with
--             vplsLdpMIB throughout the MIB and remove
--             this note.

```

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LAST-UPDATED "201302221200Z" -- 22 Feb 2013 12:00:00 GMT
ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)
Working Group"

CONTACT-INFO

"

Rohit Mediratta

Email: Rohit.mediratta@alcatel-lucent.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 (2013). 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 signaled Virtual Private LAN Services as in
[[RFC4762](#)]

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

-- Revision history.

REVISION

"201302221200Z" -- 22 Feb 2013 12:00:00 GMT

DESCRIPTION "Editorial changes."

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 assigned value, and
-- delete this note.

-- Top-level components of this MIB.

-- Notifications

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```

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 Services (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 signaling.

All of the writable objects values can be
changed when vplsConfigRowStatus is in the active(1)
state.
"
INDEX          { vplsConfigIndex }
 ::= { vplsLdpConfigTable 1 }

```

```

vplsLdpConfigEntry ::= 
SEQUENCE {
  vplsLdpConfigMacAddrWithdraw          TruthValue
}

vplsLdpConfigMacAddrWithdraw OBJECT-TYPE
SYNTAX          TruthValue
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
  "This object specifies if MAC address withdrawal
   is enabled in this service. If this object is true then
   MAC address withdrawal is enabled. If false,
   then MAC address withdrawal 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 pseudowires. A service can have more
   than one pseudowire association. Pseudowires 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 pseudowires
   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 signaling 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, pwIndex }
 ::= { vplsLdpPwBindTable 1 }

VplsLdpPwBindEntry ::=
SEQUENCE {
    vplsLdpPwBindMacAddressLimit      Unsigned32
}

vplsLdpPwBindMacAddressLimit OBJECT-TYPE
SYNTAX          Unsigned32 (0..4294967295)
MAX-ACCESS      read-write
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 {
    vplsConfigName,
    pwID
}
STATUS          current
DESCRIPTION
    "The vplsLdpPwBindMacTableFull notification is generated
     when the number of learned MAC-Addresses increases to
     the value specified in vplsLdpPwBindMacAddressLimit."
 ::= { vplsLdpNotifications 1 }

-- Conformance Section

vplsLdpCompliances
OBJECT IDENTIFIER ::= { vplsLdpConformance 1 }

-- Compliance requirement for fully compliant implementations

vplsLdpModuleFullCompliance MODULE-COMPLIANCE
STATUS current
DESCRIPTION
    "Compliance requirement for implementations that
```

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provide full support for VPLS-LDP-MIB.
Such devices can then be monitored and configured using
this MIB module."

MODULE -- this module

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

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

-- Compliance requirement for read-only implementations.

vplsLdpModuleReadOnlyCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"Compliance requirement for implementations that only
provide read-only support for VPLS-LDP-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 }
```

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```

vplsLdpGroup OBJECT-GROUP
OBJECTS {
    vplsLdpConfigMacAddrWithdraw,
    vplsLdpPwBindMacAddressLimit
}
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-MIB Object definitions**](#)

```

VPLS-BGP-MIB DEFINITIONS ::= BEGIN

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

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

RowStatus, StorageType
    FROM SNMPv2-TC                    -- RFC2579

SnmpAdminString
    FROM SNMP-FRAMEWORK-MIB          -- RFC3411

pwIndex
    FROM PW-STD-MIB                  -- RFC5601

vplsConfigIndex

```

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FROM VPLS-GENERIC-MIB

;

vplsBgpDraft01MIB MODULE-IDENTITY
-- RFC Editor: Please replace vplsBgpDraft01MIB with
-- vplsBgpMIB throughout the MIB and remove
-- this note.
LAST-UPDATED "201302221200Z" -- 22 Feb 2013 12:00:00 GMT
ORGANIZATION "Layer 2 Virtual Private Networks (L2VPN)
Working Group"

CONTACT-INFO

"
V. J. Shah
Email: vshah@juniper.net

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

DESCRIPTION

"Copyright (C) The IETF Trust (2013). 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 signaled Virtual Private LAN Services as in
[[RFC4761](#)]

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

-- Revision history.

REVISION

"201302221200Z" -- 22 Feb 2013 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.

-- Top-level components of this MIB.

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```

-- Tables, Scalars
vplsBgpObjects      OBJECT IDENTIFIER
                      ::= { vplsBgpDraft01MIB 1 }
-- Conformance
vplsBgpConformance   OBJECT IDENTIFIER
                      ::= { vplsBgpDraft01MIB 2 }

-- Vpls Bgp Config Table

vplsBgpConfigTable 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)."
  ::= { vplsBgpObjects 1 }

vplsBgpConfigEntry OBJECT-TYPE
  SYNTAX          VplsBgpConfigEntry
  MAX-ACCESS     not-accessible
  STATUS         current
  DESCRIPTION
    "A row in this table represents BGP specific information
     for Virtual Private LAN Services (VPLS) in a packet network.
     It is indexed by vplsConfigIndex, which uniquely
     identifies a single instance of a VPLS service.

    A row is automatically created when a VPLS service is
    created that is configured to use BGP signaling.
    All of the writable objects values can be
    changed when vplsConfigRowStatus is in the active(1)
    state.
    "
  INDEX          { vplsConfigIndex }
  ::= { vplsBgpConfigTable 1 }

VplsBgpConfigEntry ::=
```

```
SEQUENCE {
    vplsBgpConfigVERangeSize      Unsigned32
}

vplsBgpConfigVERangeSize   OBJECT-TYPE
SYNTAX          Unsigned32 (0..65535)
MAX-ACCESS     read-write
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.

    Entries in this table may be created or deleted
    through SNMP, as side-effects of console or other
    non-SNMP management commands, or upon learning via
    autodiscovery.

    It is optional for the agent to allow entries to be
    created that point to non-existent entries in
    vplsConfigTable."
INDEX  { vplsConfigIndex, vplsBgpVEId }
 ::= { vplsBgpVETable 1 }
```

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```
vplsBgpVEEntry ::= SEQUENCE {
    vplsBgpVEId            Unsigned32,
    vplsBgpVName           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 }

vplsBgpVName 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.

All other objects in this row must be set to valid
values before this object can be set to active(1).
```

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```

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
    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 pseudowires. A service can have more
        than one pseudowire association. Pseudowires 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 Pseudowires
        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 signaling is used to configure VPLS service.

Each entry in this table provides BGP specific
information for the VPLS represented by
vplsConfigIndex."
INDEX { vplsConfigIndex, pwIndex }

```

`::= { 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 pseudowire
         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 pseudowire
         is associated with."
::= { vplsBgpPwBindEntry 2 }

```

-- Conformance Section

-- Compliance requirement for fully compliant implementations

```

vplsBgpCompliances
OBJECT IDENTIFIER ::= { vplsBgpConformance 1 }

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

MANDATORY-GROUPS {
    vplsBgpConfigGroup,
    vplsBgpVEGroup,
    vplsBgpPwBindGroup
}

```

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```
        }
 ::= { vplsBgpCompliances 1 }

-- Compliance requirement for read-only implementations.

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

MODULE -- this module

  MANDATORY-GROUPS {
    vplsBgpConfigGroup,
    vplsBgpVEGroup,
    vplsBgpPwBindGroup
  }

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

  OBJECT          vplsBgpVName
  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
```

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```

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 {
    vplsBgpVName,
    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 VPLS capable LERs. These MIB modules can also be used for configuration of certain objects, and anything that can be configured can be incorrectly configured, with potentially undesirable results.

While the read-write and read-create objects must be protected by

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secure SNMP, none of them are especially disruptive. Similarly, while the read-only objects might present privacy concerns and due consideration should be given to protecting them with secure SNMP, none of these objects contain especially sensitive information.

8. IANA Considerations

-- (Note to RFC-Editor:)
-- IANA is requested to root the MIB modules
-- contained in this document under the transmission subtree.
--

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9.1. Normative References

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[9.2. Informative References](#)

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[10. Acknowledgments](#)

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