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Thomas D. Nadeau (Ed.)
Juniper Networks

A S Kiran Koushik (Ed.)
Cisco Systems, Inc.

Rohit Mediratta (Ed.)
Alcatel-Lucent

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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](#)] signalling. 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

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.

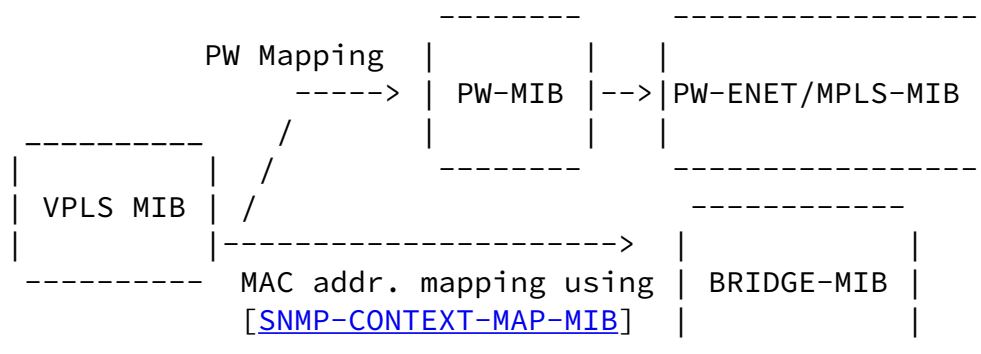


Figure A

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 a 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) 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 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.

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-MIB module.

[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 `vpplsBgpConfigTable` MUST be created by the agent

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for a VPLS service signaled using BGP.

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

- The `vpplsPwBindTable` 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 `vpplsConfigIndex`. This mapping can be used to map the `vpplsConfigIndex` 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 `vpplsConfigIndex`.
- 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 `vpplsConfigRowStatus` 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),
}
```

Row in VplsPwBindTable :

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

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.

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[[RFC2578](#)], [[RFC2579](#)], [[RFC2580](#)], [[RFC3411](#)],
 [[RFC2863](#)], [[RFC4001](#)], [[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](#)

;

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

```

```

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
    "
        Thomas D. Nadeau
        Email: tnadeau@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 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

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- "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 upto 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

"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.

-- 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 }

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 a non-SNMP application or due to the Auto-Discovery 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 needs to change one of the values for an active row the vplsConfigRowStatus should be first changed to notInService(2), the objects may

then be changed, and finally the vplsConfigRowStatus should be changed 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,
    vplsConfigRowStatus       RowStatus,
    vplsConfigMtu              Unsigned32,
    vplsConfigVpnId           VPNIidOrZero,
    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 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 }
    ::= { 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

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..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 }

vplsConfigVpnId OBJECT-TYPE

SYNTAX VpnIdOrZero

MAX-ACCESS read-only

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 }

-- VPLS Status table

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

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"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
        (pseudowires) 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 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 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."
    INDEX { vplsConfigIndex, pwIndex }
    ::= { 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

```

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whether the Pseudo Wire binding was created manually 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.
    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 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.
        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 needs to change one of the values for an active row the vplsConfigRowStatus should be first changed to notInService(2), the objects may then be changed, and finally the vplsConfigRowStatus should be changed 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 completed 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  
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 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
        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,
        vplsBgpRteTargetRowStatus        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 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 }

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

"

::= { vplsBgpRteTargetEntry 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


```

        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 }

-- 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
  }

  ::= { 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
```

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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."

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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 }

```
vplsGroup OBJECT-GROUP
  OBJECTS {
    vplsConfigName,
```

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

```

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```

        VPLS Services"
 ::= { vplsGroups 3 }

```

END

6.2. VPLS-LDP-MIB Object definitions

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

```

```

    FROM VPLS-GENERIC-MIB;

```

```

vplsLdpDraft01MIB MODULE-IDENTITY

```

```

-- RFC Editor: Please replace vplsLdpDraft01MIB with

```

-- vplsLdpMIB 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

"

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

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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

"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

vpplsLdpNotifications OBJECT IDENTIFIER
::= { vpplsLdpDraft01MIB 0 }

-- Tables, Scalars

vpplsLdpObjects OBJECT IDENTIFIER
::= { vpplsLdpDraft01MIB 1 }

-- Conformance

vpplsLdpConformance OBJECT IDENTIFIER
::= { vpplsLdpDraft01MIB 2 }

vpplsLdpConfigTable OBJECT-TYPE

SYNTAX SEQUENCE OF VpplsLdpConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

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::= { vpplsLdpObjects 1 }

vpplsLdpConfigEntry OBJECT-TYPE

SYNTAX VpplsLdpConfigEntry

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 vpplsConfigIndex, which uniquely
identifies a single VPLS.

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

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 needs to change one of the values for an active row the vplsConfigRowStatus should be first changed to notInService(2), the objects may then be changed, and finally the vplsConfigRowStatus should be changed to active(1) in order to re-initiate the signaling process with the new values in effect.

"

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

```
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 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
        vplsConfigIndex."
    INDEX { vplsConfigIndex, pwIndex }
    ::= { 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 {

```

```

        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
        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 }
```

```
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
```

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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.

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<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.

-- 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

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 configured using BGP signaling.

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 needs to change one of the values
 for an active row the vplsConfigRowStatus should be
 first changed to notInService(2), the objects may
 then be changed, and finally the vplsConfigRowStatus
 should be changed to active(1) in order to
 re-initiate the signaling process with the new
 values in effect.

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

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

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}

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
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
}

::= { 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          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 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 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 operation.

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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11. Authors' Addresses

Thomas D. Nadeau
Juniper Networks
Email: tnadeau@juniper.net

A S Kiran Koushik
Cisco Systems Inc.
12515 Research Blvd, Bldg 4,
Austin, TX 78759
Email: kkoushik@cisco.com

Rohit Mediratta
Alcatel-Lucent,
701 E Middlefield Rd.
Mountain View, CA 94040
Email: rohit.mediratta@alcatel-lucent.com

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