Yang Model for L2VPN
draft-zhuang-l2vpn-yang-cfg-00

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Introduction

- This document defines a YANG data model that can be used to configure and manage L2VPN, including
  - LDP-based VPWS
  - LDP-based VPLS
  - BGP-based VPLS
  - BGP-AD-based VPLS

Overview of Design of Data Model

module: l2vpn

    +--rw l2vpncommon

    …

    +--rw l2vpnvpws

    …

    +--rw l2vpnvpls

    …

      …

L2VPN Common Configuration

```
+--rw l2vpncommon
|  +--rw l2vpnGlobal
|  |  +--rw l2vpnEnable             boolean
|  |  +--rw vplsLoopDetectEnable?   boolean
|  +--rw pwTemplates
|     +--rw pwTemplate* [pwTemplateName]
|        +--rw pwTemplateName          string
|        +--rw peerAddr?               inet:ip-address
|        +--rw mtu?                    uint16
|        +--rw ctrlWord?               enumeration
|        +--rw tunnelPolicy?           string
|        +--rw tdmEncapsulateNumber?   uint8
|        +--rw jitterBuffer?           uint16
|        +--rw rtpHeader?              boolean
|        +--rw idleCode?               string
|        +--rw tdmSequenceNumber?      boolean
|        +--rw payloadCompression?     boolean
|        +--rw timeSlot?               uint8
|        +--rw maxAtmCells?            uint8
|        +--rw atmPackOvertime?        uint16
|        +--rw atmTransmitCell?        uint8
|        +--rw sequenceNumber?         boolean
...
```

Overview of VPWS Configuration

```
+--rw l2vpnvpws
    |  +--rw vpwsStatisticInfo
    |  ...
    |  +--rw vpwsInstances
    |  ...
    |  +--rw vpwsSwitchInstances
    |  ...
```

VPWS Configuration -- VPWS Instances Configuration

```
+--rw vpwsInstances
   +--rw vpwsInstance* [instanceName instanceType]
      +--rw instanceName        leafref
      +--rw instanceType        instanceType
      +--rw encapsulateType?    pw-encapsulation
      +--rw description?        string
      +--ro instanceState?      enumeration
      +--ro lastUpTime?         yang:date-and-time
      +--ro totalUpTime?        string
      +--rw tdmParameters
      |  +--rw tdmEncapsulateNumber?   uint8
      |  ...
      +--rw atmParameters
      |  ...
      +--rw l2vpnAcs
      |  ...
      +--rw vpwsPws
      |  ...
      +--rw reliabilitys
         +--rw reliability* [pwRedundancyMode]
   ...
```

VPWS Configuration -- VPWS Switch Instances Configuration

```
+--rw vpwsSwitchInstances
   +--rw vpwsSwitchInstance* [instanceName instanceType]
      +--rw instanceName       string
      +--rw instanceType       instanceType
      ...
      +--rw vpwsPws
         +--rw vpwsPw* [pwRole pwId]
            +--rw pwRole          pw-role
            +--rw pwId            uint32
            +--rw peerIp?         inet:ip-address
            +--rw transmitLabel?  uint32
            +--rw receiveLabel?   uint32
            +--rw ctrlWord?       enumeration
            +--rw vccvAbility?    boolean
            +--rw tnlPolicyName?  string
            +--rw pwTemplateName? string
            +--rw requestVlanId?  uint16
            +--rw vlanTpId?       string
            +--rw pwTtl?          uint8
            +--rw tdmParameters
            ...
            +--rw atmParameters
            ...
            +--rw vpwsLdpPwInfo
            ...
```

VPWS Configuration -- VPWS Statistics Information

```
+--rw vpwsStatisticInfo
   +--rw vpwsLdpAcStatInfo
   |   +--ro totalLdpAcNum?    uint32
   |   +--ro upLdpAcNum?       uint32
   |   +--ro downLdpAcNum?     uint32
   +--rw vpwsLdpPwStatInfo
   |   +--ro totalLdpPwNum?    uint32
   |   +--ro upLdpPwNum?       uint32
   |   +--ro downLdpPwNum?     uint32
   +--rw vpwsLdpPwRemoteStatInfo
   |   +--ro remoteVcNum?    uint32
   +--rw vpwsSwitchInstanceStatInfo
       +--ro totalSwitchInstanceNum?    uint32
       +--ro upSwitchInstanceNum?       uint32
       +--ro downSwitchInstanceNum?     uint32
```

Overview of VPLS Configuration

```
+--rw l2vpnvpls
   +--rw vplsStatisticInfo
   |  +--rw vplsInstStatisticsInfo
   ...
   |  +--rw vplsPwStatisticsInfo
   ...
   |  +--rw vplsAcStatisticsInfo
   ...
   |  +--ro vplsTnlRefInfos
   ...
   |  +--rw vplsLoopDetectStaticInfo
   |     +--ro totalVplsLoopDetectNum?   uint32
   +--rw vplsInstances
      +--rw vplsInstance* [instanceName]
         +--rw instanceName             string
         +--rw description?             string
         +--rw memberDiscoveryMode?     enumeration
         +--rw encapsulateType?         pw-encapsulation
         +--rw mtuValue?                uint16
         ...
```

VPLS Configuration -- VPLS Instance Configuration

```
+--rw vplsInstances
   +--rw vplsInstance* [instanceName]
      +--rw instanceName            string
      +--rw description?            string
      +--rw memberDiscoveryMode?    enumeration
      +--rw encapsulateType?        pw-encapsulation
      +--rw mtuValue?               uint16
      ...
      +--rw vsiPipe
      ...
      +--rw vplsLdpInst
      |  +--rw vsiId?               uint32
      ...
      +--rw vplsBgpAdInst
      |  +--rw vplsId?          string
      |  +--ro bgpAdRd?         string
      |  +--ro vsiId?           inet:ip-address
      |  +--rw vpnTargets
      ...
      +--rw vplsBgpInst
      |  +--rw bgpRd?        string
      |  +--rw ignoreMtu?    boolean
      ...
      +--rw vplsAcs
      |  +--rw vplsAc* [interfaceName]
      ...
      +--rw vplsLoopDetectInfo
         ...
```

VPLS Configuration -- VPLS Statistics Information

```
+--rw vplsStatisticInfo
|   +--rw vplsInstStatisticsInfo
...
|   +--rw vplsPwStatisticsInfo
...
|   +--rw vplsAcStatisticsInfo
...
|   +--ro vplsTnlRefInfos
...
|   +--rw vplsLoopDetectStaticInfo
|       +--ro totalVplsLoopDetectNum?    uint32
...
```

Next Steps

- Request for suggestions:
  - Divide into VPWS and VPLS?
  - Move Yang model of LDP-based VPWS to PALS WG? How about Yang model of BGP-based VPWS?
  - Define basic configurations for L2VPN features or incorporate all possible L2VPN features?
- Solicit comments and collaboration.
- Incorporate Yang models of more L2VPN features.
- Move to BESS WG.