# Configuring DMM over VPLS

Delay Measurement Message (DMM) is part of the ITU-T Y.1731 standard. It can be used to periodically measure Frame Delay and Frame Delay Variation between a pair of point to point MEPs. Measurements are made between two MEPs belonging to the same domain and MA.



# Restrictions for DMM support over VPLS

- With *SR_5_label_push* template, IP SLA DMM is not supported on RSP3 module.
- Only Up MEP(Maintenance End Point) on EVC(ethernet virtual circuit) BD(bridge domain) with VPLS towards the core is supported. Down MEP on VFI is not supported.
- To send unicast packets (LBR, LTM/R, Y1731 packets), port-emulation method is used. The access interface (the interface where Up MEP is configured) needs to be up to send unicast packets.

# Configuring DMM over VPLS

### SUMMARY STEPS

1. Configure CFM on PE Device.
2. Configure CFM over VPLS using **l2 vfi** *vfi-name* **manual** *evc* command or **l2vpn vfi context** *vfi-name* command.
3. Configure a Sender MEP.

### DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | Configure CFM on PE Device. | For configuration details see, Configuring Ethernet Connectivity Fault Management in a Service Provider Network . |

| | Command or Action | Purpose |
|---|---|---|
| | | In case of H-VPLS configuration, see, CFM Configuration over EFP Interface with Cross Connect Feature. |
| **Step 2** | Configure CFM over VPLS using **l2 vfi** *vfi-name* **manual** *evc* command or **l2vpn vfi context** *vfi-name* command. | The evc should be the EVC name used in the CFM on PE device configuration. For configuration details, see, Configuring the VFI in the PE. |
| **Step 3** | Configure a Sender MEP. | For configuration details see, Configuring a Sender MEP for a Single-Ended Ethernet Delay or Delay Variation Operation. |

# Configuration Example for DMM over VPLS

The following sample output shows the configuration of DMM over VPLS:

```
ethernet evc EVC_100
ethernet cfm global
ethernet cfm domain CFM-VPLS level 5
service ser1 evc EVC_100 vlan 100
continuity-check
continuity-check interval 1s
l2 vfi VPLS-CFM manual EVC_100
vpn id 100
bridge-domain 100
neighbor 2.2.2.2 encapsulation mpls
interface GigabitEthernet0/4/4
service instance 100 ethernet EVC_100
encapsulation dot1q 100
cfm mep domain CFM-VPLS mpid 1001
bridge-domain 100
ip sla 200
ethernet y1731 delay DMM domain CFM-VPLS evc EVC_100 mpid 1002 cos 7 source mpid 1001
ip sla schedule 200 start-time now
```

The following sample output shows the configuration of DMM over VPLS using the **l2vpn vfi context** command:

```
ethernet evc EVC_100
ethernet cfm global
ethernet cfm domain CFM-VPLS level 5
service ser1 evc EVC_100 vlan 100
continuity-check
continuity-check interval 1s
l2vpn vfi context VPLS-CFM
vpn id 100
evc EVC_100
neighbor 2.2.2.2 encapsulation mpls
interface GigabitEthernet0/4/4
service instance 100 ethernet EVC_100
encapsulation dot1q 100
cfm mep domain CFM-VPLS mpid 1001
bridge-domain 100
member GigabitEthernet0/4/4 service-instance 100
member vfi VPLS-CFM
ip sla 200
ethernet y1731 delay DMM domain CFM-VPLS evc EVC_100 mpid 1002 cos 7 source mpid 1001
ip sla schedule 200 start-time now
```

**Note** The EVC name is mandatory and should be the same as the one configured in CFM.

# Configuration Verification Example for DMM over VPLS

The following sample output shows the configuration verification of DMM over VPLS:

```
Router#sh ip sla configuration
IP SLAs Infrastructure Engine-III
Entry number: 200
Owner:
Tag:
Operation timeout (milliseconds): 5000
Ethernet Y1731 Delay Operation
Frame Type: DMM
Domain: CFM_VPLS
Evc: EVC_100
Target Mpid: 1002
Source Mpid: 1001
CoS: 7
   Max Delay: 5000
   Request size (Padding portion): 64
   Frame Interval: 1000
   Clock: Not In Sync
Threshold (milliseconds): 5000
Schedule:
   Operation frequency (seconds): 900  (not considered if randomly scheduled)
   Next Scheduled Start Time: Start Time already passed
   Group Scheduled : FALSE
   Randomly Scheduled : FALSE
   Life (seconds): 3600
   Entry Ageout (seconds): never
   Recurring (Starting Everyday): FALSE
   Status of entry (SNMP RowStatus): Active
Statistics Parameters
  Frame offset: 1
  Distribution Delay Two-Way:
   Number of Bins 10
   Bin Boundaries: 5000,10000,15000,20000,25000,30000,35000,40000,45000,-1
  Distribution Delay-Variation Two-Way:
   Number of Bins 10
   Bin Boundaries: 5000,10000,15000,20000,25000,30000,35000,40000,45000,-1
  Aggregation Period: 900
History
  Number of intervals: 2


Router#
```