



## 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.

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## Restrictions for DMM support over VPLS

- 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

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Configure CFM on PE Device.	For configuration details see, <a href="#">Configuring Ethernet Connectivity Fault Management in a Service Provider Network</a> .  In case of H-VPLS configuration, see, <a href="#">CFM Configuration over EFP Interface with Cross Connect Feature</a> .
<b>Step 2</b>	Configure CFM over VPLS using <b>l2 vfi vfi-name manual evc</b> command or <b>l2vpn vfi context vfi-name</b> command.	The evc should be the EVC name used in the CFM on PE device configuration. For configuration details, see, <a href="#">Configuring the VFI in the PE</a> .

	Command or Action	Purpose
<b>Step 3</b>	Configure a Sender MEP.	For configuration details see, <a href="#">Configuring a Sender MEP for a Single-Ended Ethernet Delay or Delay Variation Operation</a> .

## 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#
```

