###### 5.12.7 Dynamic PWE – Multi-Hop IP BFD

***Objective:***

Validate that protected dynamic PWE (protected HVPLS) is registered automatically to Multi-hop IP BFD sessions.

***Procedure:***

* Configure dynamic pseudowire and L2VPN service.

## Create targeted LDP sessions

ldp instance default lsr-id 192.168.44.236

ldp instance default target-ldp peers 192.168.28.78 ldp instance default target-ldp peers 192.168.28.24

ldp instance default interfaces interface lb1 enable-ipv4 true

## Create forwarding domain, classifiers, and flow points for

the L2VPN service’s attachment circuit and pseudowire.

fds fd hvpls mode vpws

classifiers classifier vlan1001 filter-entry vtag-stack vtags 1 vlan-id 1001

fps fp ac logical-port 1 fd-name hvpls

classifier-list vlan1001 stats-collection on exit

exit

## Create the protected PWEs

pseudowires pseudowire PW1 mode spoke protect true role primary configured-pw peer-ip 192.168.28.24 pw-id 100

pseudowires pseudowire bkPW1 mode spoke protect true role backup primary-pw PW1 configured-pw peer-ip 192.168.28.78 pw-id 200

## create the L2VPN service that identifies PWE and the forwarding domain

l2vpn-services l2vpn service1 signaling-type ldp pseudowire PW1

pseudowire bkPW1 forwarding-domain hvpls

exit exit

* Enter the command to validate the pseudowires.

5144-0019-Node4> show pseudowires

PSEUDOWIRE FLAG SUMMARY

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | s D  a | =  =  = | static operationally  active | down | d U  b | =  =  = | dynamic operationally  standby | up | |  |  | |
| | | S | = | spoke PW |  | M | = | mesh PW |  | | |
| | | F | = | PW forwarding |  | B | = | PW blocking |  | | |

| W = switching PW |

+ PSEUDOWIRES STATE +

| PW Id | Name | Peer IP | Oper State | In Label | Out Label | Flags |

+ + + + + + + +

**| 100 | PW1 | 192.168.28.24 | UP | 52002 | 52000 | dUSaF |**

**| 200 | bkPW1 | 192.168.28.78 | DOWN | 52003 | 52000 | dDSbB |**

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* Create the Multi-hop BFD sessions for primary PWE – 10ms interval:

Local

bfd ip-mh session-groups session-group lb1 192.168.28.24 source- addr 192.168.44.236 desired-min-tx-interval 10000 required-min-

rx-interval 10000

Remote

bfd ip-mh session-groups session-group lb1 192.168.44.236 source-addr 192.168.28.24 desired-min-tx-interval 10000

required-min-rx-interval 10000

* Validate the BFD session:

5144-0019-Node4> show bfd sessions

+ IPV4 BIDIRECTIONAL FORWARDING DETECTION +

| Interface | | Source | Destination | | Nego Tx | Nego Rx | Local | Remote | Up | Up |

| Name | Type | IP | IP | Accelerate | (us) | (us) | State | State | Count | Time |

+ + +

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| | if21 | | IPv4:SH | 172.16.1.2 | 172.16.1.1 | True |  | 3,300 |  | 3,300 | UP | UP | | 3 | 01:02:21 | |
| **| lb1** | **| IPv4:MH | 192.168.44.236 | 192.168.28.24 | False** |  | **10,000** |  | **10,000 | UP | UP** | **| 2 | 00:00:55** | |

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* Break fiber on the path of the primary PWE and ensure that traffic switches to protection PWE within 50ms. The MH IP bfd session will accelerate the protections switch. Without the BFD session, the PWE switch will only occur when IGP has detected the fault.

Test Case Results:

Passed: Yes No Verified by Date/Time Comments