Appendix

Link Redundancy Support

Starting from RPD v8.2, Link Redundancy is supported on RPD. RPD backhaul working modes include:

- Link-redundancy mode: there is only one virtual backhaul interface which always binds to active 10GE port.

- Daisy-chain mode: works for daisy-chain topology RPD, that is each RPD is daisy-chained with the next RPD, and the last RPD connects to the CIN.

Note

- Daisy-chain mode is the RPD default backhaul mode. If you upgrade RPD from v8.1 or a lower version without mode configuration, RPD backhaul works in daisy-chain mode.

- To change the RPD backhaul mode, you must hard-reset the RPD for it to take effect.

When you enable link-redundancy:

- Only one virtual backhaul interface VBH0 is available.

- Virtual backhaul interface always binds to active 10GE port. One 10G port works in active mode and the other one works in the standby mode.

- The first reachable 10GE port is the active port: the DHCP process gets the IP address and then determines the active 10GE port.

- Link state change triggers port switchover: when the active 10GE port is down, VBH0 binds to the standby 10GE port.

- Port selection occurs both at the boot-time and the run-time.

- Port switch causes 3-5 sec traffic interruption.

Configuring RPD Backhaul Mode

You can configure RPD backhaul mode in two different ways:

- Use CLI **backhaul link-redundancy** to configure RPD backhaul mode between daisy-chain mode and link-redundancy mode.

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#backhaul link-redundancy
Enable link redundancy mode
Please Reload to Take effect.
R-PHY(config)#end
R-PHY#

R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#backhaul daisy-chain
Enable daisy chain mode
Please Reload to Take effect.
R-PHY(config)#end
```

Daisy-chain mode is the RPD default backhaul mode. You can restore RPD to daisy-chain mode by using CLI **no backhaul link-redundancy**.

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#no backhaul link-redundancy
Restore daisy chain mode
Please Reload to Take effect.
R-PHY(config)#end
R-PHY
```

- Configure RPD backhaul mode by VendorSpecificExtension TLV BackhaulLinkMode (TLV 21.18).

Attribute Name	Type	Access	Type Constraints	Units	TLV Type	TLV Value Field Length
Mode	UnsignedByte	Read Write	automatic(0) daisy-chain(1) ether-ring(2) link-redundancy(3)		21.18.1	1

Mode: TLV 21.18.1. This attribute represents the configuration of RPD backhaul interface mode. Currently, we only support daisy-chain(1) and link-redundancy(3) mode.

Verifying RPD Backhaul Mode

To verify the status of the backhaul interface, use the **show interface info** command as shown in the following example:

```
R-PHY#show interface info
Backhaul configured as Link Redundancy
Backhaul 0: BH-UP
Backhaul 1: BH-UP
```

```
==============================================================
vbh0        Link encap:Ethernet  HWaddr 10:04:9F:30:11:00
            inet addr:91.7.66.206  Bcast:91.7.66.255  Mask:255.255.255.0
            inet6 addr: fe80::1204:9fff:fe30:1100/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST  MTU:2350  Metric:1
            RX packets:1178879 errors:0 dropped:0 overruns:0 frame:0
            TX packets:594792 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:91654228 (87.4 MiB)  TX bytes:58392651 (55.6 MiB)
```

To check the RPD link-redundancy information, history, and status, use the commands as shown in the
following example:

```
R-PHY#show redundancy
Redundant System Information : Daisy Chain
--------------------------------------------------------------
Current system uptime:            1233.96 seconds
Switchovers Counter:              1
Last switchover reason:           BH 0 Down

R-PHY#show redundancy history
Mode    Reason      BH-Intf  Date                      uptime
LRED    cmd line    BH 1     Mon Apr 20 06:27:55 2020  242.587s
LRED    BH 1 Down   BH 0     Mon Apr 20 06:56:11 2020  1890.827s
LRED    BH 0 Down   BH 1     Mon Apr 20 06:57:27 2020  1966.787s

R-PHY#show redundancy status
Initial Active: BH 1
Current Active: BH 1
Last switchover: 1966.787s Mon Apr 20 06:57:27 2020
```