



## Link Redundancy

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## 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.



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### Note

- Daisy-chain mode is the RPD default backhaul mode. If you upgrade RPD from V8.1 or lower version without mode configuration, RPD backhaul will working in daisy-chain mode.
  - To change the RPD backhaul mode, you need to hard-reset the RPD for it to take effect.
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With link redundancy enabled:

- Only one virtual backhaul interface VBH0 will be available to the user.
- Virtual backhaul interface always binds to active 10GE port. One 10G port will work in active mode and the other one will work in standby mode.
- The first reachable 10GE port will be the active port: the DHCP process will get IP address and then determine active 10GE port.
- Link state change triggers port switchover: when the active 10GE port is down, VBH0 binds to standby 10GE port.
- Port selection will occur both at boot-time and run-time.
- Port switch will cause 3-5 seconds 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 configuration

To verify the status of the backhaul interface, use **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
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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

```

## Feature Information for Link Redundancy Support

Use Cisco Feature Navigator to find information about the platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to the <https://cfmg.cisco.com/> link. An account on the Cisco.com page is not required.



**Note** The following table lists the software release in which a given feature is introduced. Unless noted otherwise, subsequent releases of that software release train also support that feature.

**Table 1: Feature Information for Link Redundancy Support**

Feature Name	Releases	Feature Information
Link Redundancy Support	Cisco 1x2 / Compact Shelf RPD Software 8.2	This feature was integrated into the Cisco Remote PHY Device.

