Distributed Route Processor Commands

Distributed route processors (DRPs) can be installed individually or in pairs. This module describes the commands used to create redundant DRP pairs.

DRP Overview

The DRP card and its associated physical layer interface module (PLIM) function as an additional route processor (RP) in the Cisco CRS-1 router. The DRP does not perform any of the control and management functions performed by the RP; therefore, it can never be the designated system controller (DSC) in a multishelf system. However, the DRP can be configured for the following purposes:

- The DRP can act as the designated secure domain router system controller (DSDRSC) in a secure domain router (SDR). An SDR is a part of the Cisco CRS-1 routing system that functions as a complete router, running its own routing protocols and forwarding IP packets between its interfaces.
- The DRP can provide additional processing capacity for any of the routing processes that run on the RP (for example, BGP, OSPF, IS-IS, MPLS, LDP, IP multicast, and so on).

Related Documents

For additional information, see the following Cisco Systems documents:

- *Configuring Secure Domain Routers on Cisco IOS XR Software* module in *Cisco IOS XR System Management Configuration Guide for the Cisco CRS Router*, for instructions on using DRPs in a secure domain router configuration.
- *Process Placement on Cisco IOS XR Software* module in *Cisco IOS XR System Management Configuration Guide for the Cisco CRS Router*, for instructions on configuring process placement and DRPs.
- *Cisco CRS-1 Carrier Routing System 16-Slot Line Card Chassis System Description*, for DRP hardware description and requirements.
- *Installing the Cisco CRS-1 Carrier Routing System 16-Slot Line Card Chassis*, for instructions on installing DRP and DRP PLIM cards.

location (DRP)

To assign nodes to a DRP pair, use the **location** command in DRP pairing configuration mode. To remove the node from a DRP pair, use the **no** form of this command.

location *partially-qualified-nodeid partially-qualified-nodeid*

no location

Syntax Description

partially-qualified-nodeid	Specifies the nodes to be assigned to the specified DRP pair. The *node-id* argument is entered in the *rack*/*slot*/*module* notation. Node IDs are always specified at the slot level, so the wildcard (*) is used to specify the CPU.

Command Default

None

Note

Command Modes

DRP pairing configuration

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **location** command in DRP pairing configuration mode to assign nodes to a DRP pair. The following rules apply to DRP pairing assignments:

- To create a DRP pair name, use the **pairing** command.
- Two nodes are assigned to each DRP pair. For example: **location 0/2/* 0/3/***.
- DRPs are always specified at a slot level. The wildcard (*) is used to specify the CPU.
- To be added to a DRP pair, the *node-id* must belong to the owner SDR. If a node is already assigned to a non-owner SDR, the node must be removed from the non-owner SDR before it can be assigned to a DRP pair.
- A *node-id* cannot be used by more than one DRP pair.

- Only two nodes can be assigned to a DRP pair. In the following example, only the last **location 0/0/* 0/4/*** takes effect:

```
RP/0/RP0/CPU0:router(admin-config)# pairing pair1
RP/0/RP0/CPU0:router(admin-config-pairing:pair1)# location 0/1/* 0/4/*
RP/0/RP0/CPU0:router(admin-config-pairing:pair1)# location 0/0/* 0/4/*
RP/0/RP0/CPU0:router(admin-config-pairing:pair1)# commit
```

- Use the **no** form of the **location** command to remove both nodes from the DRP pair. Removing a node from a DRP pair implicitly returns it to the owner SDR. When a node has been removed from an SDR, it can be reassigned to another SDR.

Task ID

Task ID	Operation
system	read, write

Examples

The following example shows how to enter DRP pairing configuration mode, create a DRP pair named "drp1," and assign node 0/3/* and node 0/4/* to the DRP pair:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# pairing drp1
RP/0/RP0/CPU0:router(admin-config-pairing:drp1)# location 0/3/* 0/4/*
```

The following example shows how to remove a DRP pair:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# pairing drp1
RP/0/RP0/CPU0:router(admin-config-pairing:drp1)# no location
```

Related Commands

Command	Description
location (SDR)	Assigns a node to a secure domain router.
pairing (DRP)	Specifies a distributed router processor (DRP) pair and enters DRP pairing configuration mode.
pair (SDR)	Assigns a distributed route processor (DRP) pair to a secure domain router (SDR).
sdr	Creates a secure domain router (SDR) and enters SDR configuration mode.

pairing (DRP)

To specify a distributed route processor (DRP) pair and enter DRP pairing configuration mode, use the **pairing** command in administration configuration mode. To remove a named DRP pair from the configuration, use the **no** form of this command.

pairing *pair-name*

no pairing *pair-name*

Syntax Description

pair-name	Name of the DRP pair. The name can a maximum of 32 alphanumeric characters. The characters "_" or "-" are also allowed. All other characters are invalid.

Command Default

None

Command Modes

Administration configuration

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the**pairing** command to create a DRP pair or modify an existing DRP pair.

Note The *pair-name* argument creates a DRP pair if the *pair-name* specified does not already exist.

After the **pairing** command is issued, the router enters DRP pairing configuration mode. From DRP pairing configuration mode, you can specify the nodes for the DRP pair using the **location** (drp) command. The locations specified are added to the DRP pair, or modify the existing pair.

Use the **no** form of the command to remove a DRP pair configuration. When a DRP pair is removed from the configuration, the nodes are returned to the owner SDR.

Task ID

Task ID	Operations
system	read, write

Examples

The following example shows how to enter DRP pairing configuration mode to configure a DRP pair:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# pairing drp1
RP/0/RP0/CPU0:router(admin-config-pairing:drp1)# location 0/3/* 0/4/*
```

The following example shows how to remove a DRP pair:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# no pairing drp1
```

Related Commands

Command	Description
location (DRP)	Assigns nodes to a DRP pair.
location (SDR)	Assigns a node to a secure domain router.
pair (SDR)	Assigns a distributed route processor (DRP) pair to a secure domain router (SDR).
sdr	Creates a secure domain router (SDR) and enters SDR configuration mode.