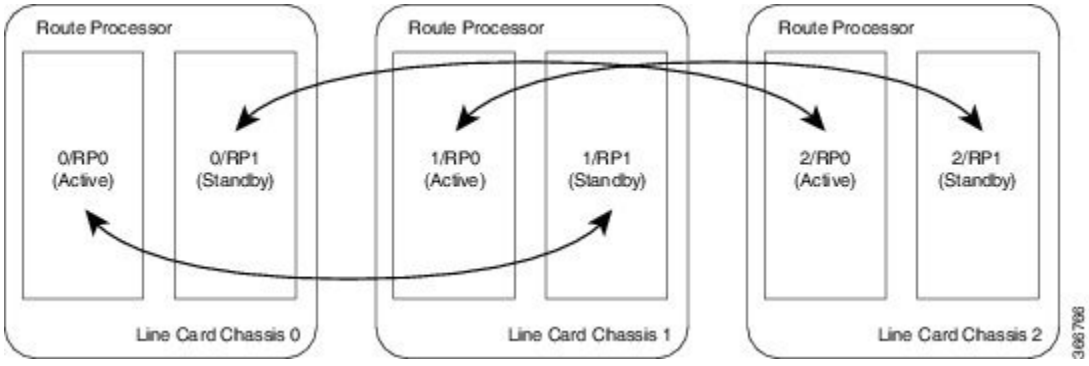
Inter-Rack RP Pairing

This chapter provides details regarding inter-rack RP pairing in the Cisco NCS 4000 Series Router.

Inter-rack RP Pairing

In a multi chassis (MC) system, the active-standby RP pairing in a single rack is called intra-rack pairing. There is a possibility that the rack which houses the active VM and standby VM may go down. This results in the reboot of all the line card chassis, thus impacting traffic of the MC system. Inter-rack (or cross-rack) pairing allows pairing route processors (RP) between racks to provide high availability (HA) against rack failures. The RP of one rack is paired with the RP on the next rack. The pairing is determined by the SDR manager through a daisy chain algorithm. The algorithm is executed only on the discovered set of nodes. The pairing remains consistent as long as the set of nodes that were discovered is constant.

Figure 1: Example for inter-rack pairing



Only the racks with dual RPs (an RP on both slots of the rack) are considered for inter-rack pairing. The pairing algorithm is triggered automatically when:

- a rack is inserted
- a change in chassis configuration is committed
- RP is re-inserted (or replaced)
- re-pair command is manually executed
- change in configuration between inter-rack and intra-rack pairing, and vice-versa

Inter-rack pairing is triggered manually or automatically, when:

- an RP is added or deleted
- an OIR is performed for an RP

System Readiness

The system must be ready before and after enabling inter-rack pairing. Run these commands to improve debuggability and compare their output to expected behavior. This ensures that the system is ready, and any changes in System Admin are reflected in XR VMs.

Table 1: Commands used to check the system readiness

Description	Commands
Verify all the nodes are in Operational state and a Standby RP is available in Ready state	**SysAdmin VM:** • show sdr default-sdr pairing • show platform • show platform slice • show vm • show vm • show version • show inventory • show log • show install log • show run • dir:harddisk **XR-VM:** • show redundancy • show platform vm • show placement program all • show health gsp • show health sysdb • show platform • show log • show run • cfs check • dir harddisk:

Description	Commands
Verify the fabric health and system environment. Ensure all fabric planes are Up and fan speed is not zero.	**SysAdmin VM:** • show controller fabric health • show controller fabric plane all • show alarms detail • show environment power • show environment fan • show environment temp

Enable Inter-rack Pairing Mode

The default mode is intra-rack. The pairing algorithm is run when inter-rack (cross-rack) pairing mode is enabled for a multi chassis system. Traffic loss may occur when moving between inter-rack and intra-rack pairing modes. All cross-rack related triggers must be done in a maintenance window.

Procedure

Step 1 **config**

Example:

```
sysadmin-vm:0_RP0#config
```

Enters sysadmin configuration mode.

Step 2 **sdr defautlt-sdr pairing-mode inter-rack**

Example:

```
sysadmin-vm:0_RP0(config) # sdr default-sdr pairing-mode
inter-rack
```

Enable inter-rack pairing mode.

Step 3 **commit**

Example:

```
sysadmin-vm:0_RP0(config) # commit
```

Commits the configuration changes.

Step 4 **show sdr default-sdr pairing**

Example:

```
sysadmin-vm:0_RP0 # show sdr default-sdr pairing
Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
 Pairs
   Pair Name Pair0
```

```
    Node 0   0/RP1
    Node 1   1/RP0
 Pairs
   Pair Name Pair1
    Node 0   1/RP1
    Node 1   2/RP0
 Pairs
   Pair Name Pair2
    Node 0   2/RP1
    Node 1   3/RP0
 Pairs
   Pair Name Pair3
    Node 0   3/RP1
    Node 1   0/RP0
```

Displays the pairing details.Verify that the pairing is inter-rack and the partner nodes are on different racks.

Initiate Re-pair

The user can manually initiate re-calculation of the inter-rack pairing algorithm. This task changes the pairing based on the current state of the card inventory.

Procedure

Step 1 **sdr default-sdr re_pair**

Example:

```
sysadmin-vm:0_RP1# sdr default-sdr re_pair
```

Displays the current configuration and the prediction for the re_paired configuration. If any rack is down, the sdr default-sdr re_pair command optimizes the pairing based on this change.

Step 2 **show sdr default-sdr pairing**

Example:

```
sysadmin-vm:0_RP0#show sdr default-sdr pairing


Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
 Pairs
   Pair Name Pair0
    Node 0   0/RP1
    Node 1   1/RP0
 Pairs
   Pair Name Pair1
    Node 0   1/RP1
    Node 1   2/RP0
 Pairs
   Pair Name Pair2
    Node 0   2/RP1
    Node 1   3/RP0
 Pairs
   Pair Name Pair3
    Node 0   3/RP1
    Node 1   0/RP0
```

Displays the updated inter-rack pairing information.

Usecases for re-pairing RPs

This section describes the scenarios where manual or automatic re-pairing of RPs is required.

Automatic re-pairing is initiated when:

- a rack is inserted
- a rack is removed
- an RP is inserted to create dual RP

Manually re-pairing is initiated when:

- a rack failure is detected
- an RP is reinserted (as part of OIR of an RP)
- RP is removed from SDR

Re-pair due to Rack Insertion

This task shows the automatic recalculation of the pairing algorithm when a rack is inserted.

Use the following commands to check the current status of the chassis:

- **show chassis**
- **show redundancy**
- **show sdr default-sdr pairing**
- **show running-config chassis**

Procedure

Step 1 **config**

Example:

```
sysadmin-vm:0_RP0#config
```

Enters sysadmin configuration mode.

Step 2 **chassis serial** *serial number* **rack** *rack-id*

Example:

```
sysadmin-vm:F1_SC0(config)# chassis serial FLM171762WW rack 1
```

Enters the chassis cofiguration mode. Associates a rack number to the chassis.

Step 3 **commit**

Commits the configuration changes.

Step 4 Insert a rack.

Step 5 **show chassis**

Example:

```
Serial Num    Rack Num    Rack Type   Rack State  Data Plane  Ctrl Plane
------------------------------------------------------------------------
FLM213101U5   F1          FCC         OPERATIONAL CONN        CONN
FLM213200BF   F0          FCC         OPERATIONAL CONN        CONN
FLM213200BR   F3          FCC         OPERATIONAL CONN        CONN
FLM21330065   F2          FCC         OPERATIONAL CONN        CONN
SAL1834ZBRN   1           LCC         OPERATIONAL CONN        CONN
SAL2016PB3Z   3           LCC         OPERATIONAL CONN        CONN
SAL205100M2   0           LCC         OPERATIONAL CONN        CONN
SAL2106055V   2           LCC         OPERATIONAL CONN        CONN
```

Verify if the newly inserted rack is visible.

Step 6 **show running-config chassis**

Example:

```
show running-config chassis Wed Jan  23 14:57:02.618 UTC-05:30 chassis serial FLM213101U5
 rack F1 !
chassis serial FLM213200BF
 rack F0
!
chassis serial FLM213200BR
 rack F3
!
chassis serial FLM21330065
 rack F2
!
chassis serial SAL1834ZBRN
 rack 1
!
chassis serial SAL2016PB3Z
 rack 3
!
chassis serial SAL205100M2
 rack 0
!
chassis serial SAL2106055V
 rack 2
!
```

Verify the chassis configuration.

Re-pair due to Rack Removal

This task shows the automatic recalculation of the pairing algorithm when a rack is removed.

Use the following commands to check the current status of the chassis:

- **show chassis**

- **show redundancy**
- **show sdr deafult-sdr pairing**
- **show running-config chassis**

Procedure

Step 1 **config**

Example:

```
sysadmin-vm:0_RP0#config
```

Enters sysadmin configuration mode.

Step 2 **no chassis serial** *chassis-serial-number*

Example:

```
sysadmin-vm:F1_SC0(config)# no chassis serial  SAL205100M9
```

Removes the rack.

Step 3 **commit**

Commits the configuration changes.

Step 4 **show chassis**

Example:

```
Serial Num    Rack Num    Rack Type   Rack State  Data Plane  Ctrl Plane
------------------------------------------------------------------------
FLM213101U5   F1          FCC         OPERATIONAL CONN        CONN
FLM213200BF   F0          FCC         OPERATIONAL CONN        CONN
FLM213200BR   F3          FCC         OPERATIONAL CONN        CONN
FLM21330065   F2          FCC         OPERATIONAL CONN        CONN
SAL1834ZBRN   1           LCC         OPERATIONAL CONN        CONN
SAL2016PB3Z   3           LCC         OPERATIONAL CONN        CONN
SAL205100M2   0           LCC         OPERATIONAL CONN        CONN
SAL2106055V   2           LCC         OPERATIONAL CONN        CONN
```

Verify if the removed rack details are not displayed.

Step 5 **show sdr default-sdr pairing**

Example:

```
Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
 Pairs
   Pair Name Pair0
    Node 0   0/RP1
    Node 1   1/RP0
 Pairs
   Pair Name Pair1
    Node 0   1/RP1
    Node 1   2/RP0
 Pairs
```

```
   Pair Name Pair2
    Node 0   2/RP1
    Node 1   3/RP0
 Pairs
   Pair Name Pair3
    Node 0   3/RP1
    Node 1   0/RP0
```

Displays the recalculated pairing. Observe that the deleted rack is not included in the new pairing information.

Step 6 **show redundancy summary**

Example:

```
 Active Node    Standby Node
 -----------    ------------
1/RP1           2/RP0 (Node Ready, NSR:Not Configured)
1/LC0           1/LC1 (Node Ready, NSR:Not Configured)
0/RP1           1/RP0 (Node Ready, NSR:Not Configured)
3/LC0           3/LC1 (Node Ready, NSR:Not Configured)
0/RP0           3/RP1 (Node Ready, NSR:Not Configured)
2/RP1           3/RP0 (Node Ready, NSR:Ready)
0/LC0           0/LC1 (Node Ready, NSR:Not Configured)
2/LC0           2/LC1 (Node Ready, NSR:Not Configured)
```

Verify the node status and pairing.

Re-pair due to RP Insertion

When an RP is inserted to a rack to create a chassis with dual RP, the re-pairing of RPs is automatically recalculated. For more information regarding RP installation, see the *Cisco NCS 4000 Hardware Installation Guide.*

Procedure

Step 1 **show redundancy summary**

Example:

```
Active Node            Standby Node
-----------            ------------
      1/RP1           2/RP0 (Node Ready, NSR:Not Configured)
      1/LC0           1/LC1 (Node Ready, NSR:Not Configured)
      0/RP1           1/RP0 (Node Ready, NSR:Not Configured)
      3/LC0           3/LC1 (Node Ready, NSR:Not Configured)
      0/RP0           3/RP1 (Node Ready, NSR:Not Configured)
      2/RP1           3/RP0 (Node Ready, NSR:Ready)
      0/LC0           0/LC1 (Node Ready, NSR:Not Configured)
      2/LC0           2/LC1 (Node Ready, NSR:Not Configured)
```

Verify the node status and pairing.

Step 2 Insert an RP.

Step 3 **show sdr default-sdr pairing**

Example:

```
Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
 Pairs
   Pair Name Pair0
    Node 0   0/RP1
    Node 1   1/RP0
 Pairs
   Pair Name Pair1
    Node 0   1/RP1
    Node 1   2/RP0
 Pairs
   Pair Name Pair2
    Node 0   2/RP1
    Node 1   3/RP0
 Pairs
   Pair Name Pair3
    Node 0   3/RP1
    Node 1   0/RP0
```

Displays the recalculated pairing. Observe that the pairing is calculated in such a way that the rack in which the new RP is installed is included.

Re-pair due to Rack Failure

A re-pair of the RPs can be initiated manually when a rack is not functional. This will re-establish rack level high availability (HA). A rack failure may occur during one or more of these circumstances:

- simultaneous hardware or software failure on both RPs in the rack
- simultaneous loss of ethernet connectivity from rest of the system on both RPs in the rack
- isolation of rack due to fiber cut(s)
- power failure

HA can be re-established by triggering re-calculation of pairing within a maintenance window. This can be done by:

- removing the affected rack from the system by deleting it from the chassis configuration using **no chassis serial** *chassis-serial-number* command.
- shutting down the rack and running re-pair manually

This section shows the steps for shutting down the rack and running the re-pair manually.

Use the following commands to check the current status of the chassis:

- **show chassis**
- **show sdr default-sdr pairing**
- **show running-config chassis**

Procedure

Step 1 **sdr default-sdr re_pair**

Example:

```
sysadmin-vm:0_RP0# sdr default-sdr re_pair
```

Removes the required rack from the re-pairing configuration.

Step 2 **show chassis**

Example:

```
Serial Num    Rack Num    Rack Type   Rack State  Data Plane  Ctrl Plane
------------------------------------------------------------------------
FLM213101U5   F1          FCC         OPERATIONAL CONN        CONN
FLM213200BF   F0          FCC         OPERATIONAL CONN        CONN
FLM213200BR   F3          FCC         OPERATIONAL CONN        CONN
FLM21330065   F2          FCC         OPERATIONAL CONN        CONN
SAL1834ZBRN   1           LCC         OPERATIONAL CONN        CONN
SAL2016PB3Z   3           LCC         OPERATIONAL CONN        CONN
SAL205100M2   0           LCC         OPERATIONAL CONN        CONN
SAL2106055V   2           LCC         OPERATIONAL CONN        CONN
```

Verify if the newly inserted rack is visible.

Step 3 **show running-config chassis**

Example:

```
chassis serial FLM213200BF
 rack F0
!
chassis serial FLM213200BR
 rack F3
!
chassis serial FLM21330065
 rack F2
!
chassis serial SAL1834ZBRN
 rack 1
!
chassis serial SAL2016PB3Z
 rack 3
!
chassis serial SAL205100M2
 rack 0
!
chassis serial SAL2106055V
 rack 2
!
```

Verify the chassis configuration.

Step 4 **show sdr default-sdr pairing**

Example:

```
Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
```

```
Pairs
  Pair Name Pair0
   Node 0   0/RP1
   Node 1   1/RP0
Pairs
  Pair Name Pair1
   Node 0   1/RP1
   Node 1   2/RP0
Pairs
  Pair Name Pair2
   Node 0   2/RP1
   Node 1   3/RP0
Pairs
  Pair Name Pair3
   Node 0   3/RP1
   Node 1   0/RP0
```

Displays the SDR algorithm. Verify if the removed rack is not included.

Re-pair due to RP Removal

This task shows how to manually initiate re-pairing when an RP is removed during the OIR procedure.

Use the following commands to check the current status of the chassis:

- **show redundancy summary**
- **show sdr default-sdr pairing**

Procedure

Step 1 Remove an RP (a part of the OIR procedure).

Step 2 **sdr default-sdr re_pair**

Example:

```
sysadmin-vm:0_RP0# sdr default-sdr re_pair
```

After an RP is removed, the pairing is impacted. This results in a mismatch between the SDR configuration and the actual state of the nodes.

Step 3 **show sdr default-sdr pairing**

Example:

```
Pairing Mode  INTER-RACK  SDR Lead
   Node 0 0/RP1
   Node 1 1/RP0
 Pairs
   Pair Name Pair0
    Node 0   0/RP1
    Node 1   1/RP0
 Pairs
   Pair Name Pair1
    Node 0   1/RP1
    Node 1   2/RP0
 Pairs
   Pair Name Pair2
```

```
    Node 0   2/RP1
    Node 1   3/RP0
 Pairs
   Pair Name Pair3
    Node 0   3/RP1
    Node 1   0/RP0
```

Displays the SDR algorithm. Verify if the RP pairing is restored.

Process Placement after a Pairing Change

You must check the placement reoptimization of configuration before and after a change in pairing algorithm. This maintains High Availability (HA) for configurable processes.This includes moving to inter-rack or intra-rack pairing, running a manual re-pair, or triggering an automatic re_pair scenario. This feature provides the flexibility to decide a change in service placements based on the prediction from process placement.

Use the following commands to check the current status of the chassis:

show chassis

- **show redundancy summary**
- **show placement reoptimize**

Procedure

	Command or Action	Purpose
Step 1	**placement reoptimize** **Example:** `sysadmin-vm:0_RP0#placement reoptimize`	Reoptimizes the placement of processes to provide HA.
Step 2	**show placement reoptimize** **Example:** `sysadmin-vm:0_RP0# show placement reoptimize`	Displays predictions (if any) after reoptimizing the processes. Verify the reoptimized placement matches the current placement and no more changes are predicted.

Re-Pair RPs

Purpose	This procedure provides instructions for re-pairing route processors.
Tools/Equipment	None
Prerequisite Procedures	Login to CTC.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 In node view, click the **Provisioning** > **General** > **Inter Rack Management** tabs.

The SDR Lead indicates the lead RP pair; Pairing Mode displays the pairing type.

Step 2 Select the required radio button to change the pairing type.

The RP pairs are indicated in the Pairs pane.

Step 3 Click **Refresh** to see the latest pairing after initiating re-pair.

Step 4 Click **Re-pair** to initiate re-pairing of RPs.

The table under the Pairs pane changes based on the latest re-paired RPs. Click **Re-pair** only if re-pairing is not initiated by the SDR alogirthm.

Delete RSVP File using Process Restart Command

Table 2: Feature History

Feature Name	Release Information	Feature Description
Delete RSVP File using Process Restart Command	Cisco IOS XR Release 6.5.32	The Process Restart command enables the user to delete stale RSVP files from reused Route Processors in a multi chassis (MC) system

This task describes the steps to delete the stale RSVP files.

Procedure

Step 1 **show redundancy summary**

Example:

```
Active Node    Standby Node
    -----------    ------------
          3/RP1          4/RP0 (Node Ready, NSR:Not Configured)
          4/LC0          4/LC1 (Node Ready, NSR:Not Configured)
          0/LC1          0/LC0 (Node Ready, NSR:Not Configured)
          1/RP1          2/RP0 (Node Ready, NSR:Not Configured)
          0/RP1          1/RP0 (Node Ready, NSR:Not Configured)
          5/RP1          6/RP0 (Node Ready, NSR:Not Configured)
          3/LC0          3/LC1 (Node Ready, NSR:Not Configured)
          2/RP1          3/RP0 (Node Ready, NSR:Not Configured)
          6/RP1          0/RP0 (Node Ready, NSR:Not Configured)
          1/LC1          1/LC0 (Node Ready, NSR:Not Configured)
          6/LC0          6/LC1 (Node Ready, NSR:Not Configured)
          4/RP1          7/RP0 (Node Ready, NSR:Not Configured)
          5/LC0          5/LC1 (Node Ready, NSR:Not Configured)
          5/RP0          7/RP1 (Node Ready, NSR:Ready)
          7/LC0          7/LC1 (Node Ready, NSR:Not Configured)
          2/LC0          2/LC1 (Node Ready, NSR:Not Configured)
```

Check the Active and Standby NSR pair status.

Step 2 **attach location** *Active Node ID|Standby Node ID*

Example:

```
#attach location 5/rp0
Fri Aug  6 12:35:37.129 IST
[xr-vm_node5_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:28 chkpt_rsvp_000_001_v2
#attach location 7/RP1
Fri Aug  6 12:36:12.524 IST
[xr-vm_node7_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16027648 Aug  6 12:28 chkpt_rsvp_000_001_v2
```

Check the RSVP check point file on NSR pair RPs.

Step 3 **attach location** *active-node-id|standby-node-id*

Example:

```
#attach location 0/rp0
Fri Aug  6 12:43:37.649 IST
[xr-vm_node0_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 0/rp1
Fri Aug  6 12:43:59.941 IST
[xr-vm_node0_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 1/rp0
Fri Aug  6 12:44:27.607 IST
[xr-vm_node1_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 1/rp1
Fri Aug  6 12:44:51.533 IST
[xr-vm_node1_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 2/RP0
Fri Aug  6 12:48:20.483 IST
[xr-vm_node2_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
```

```
#attach location 2/RP1
Fri Aug  6 12:48:53.330 IST
[xr-vm_node2_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:41 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 3/rp0
Fri Aug  6 12:49:23.656 IST
[xr-vm_node3_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:42 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 3/rp1
Fri Aug  6 12:49:39.030 IST
[xr-vm_node3_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:42 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 4/rp0
Fri Aug  6 12:50:21.691 IST
[xr-vm_node4_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:42 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 4/rp1
Fri Aug  6 12:50:47.250 IST
[xr-vm_node4_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:42 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 5/rp1
Fri Aug  6 12:51:12.117 IST
[xr-vm_node5_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:42 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 6/RP0
Fri Aug  6 12:52:22.016 IST
[xr-vm_node6_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:43 chkpt_rsvp_000_001_v2
#exit
logout
#attach location 6/RP1
Fri Aug  6 12:52:43.476 IST
[xr-vm_node6_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:43 chkpt_rsvp_000_001_v2
#exit
logout
```

```
#attach location 7/Rp0
Fri Aug  6 12:53:07.963 IST
[xr-vm_node7_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-rw-r--r-- 1 root root 16035840 Aug  6 12:43 chkpt_rsvp_000_001_v2
```

Check for stale RSVP check point file on non-NSR RPs.

Step 4 **process restart rsvp loc** *standby-node-id*

Example:

```
#process restart rsvp loc 7/RP1
```

Perform RSVP process restart on standby node.

Step 5 **attach location** *non-nsr-pair-rp-id*

Example:

```
#attach location 0/rp0
Fri Aug  6 13:01:27.675 IST
[xr-vm_node0_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 0/rp1
Fri Aug  6 13:01:57.807 IST
[xr-vm_node0_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt| grep rsvp
#exit
logout
#attach location 1/rp0
Fri Aug  6 13:02:17.709 IST
[xr-vm_node1_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 1/rp1
Fri Aug  6 13:02:35.582 IST
[xr-vm_node1_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 2/rp0
Fri Aug  6 13:03:00.773 IST
[xr-vm_node2_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 2/rp1
Fri Aug  6 13:03:18.260 IST
[xr-vm_node2_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 3/rp0
Fri Aug  6 13:03:37.685 IST
[xr-vm_node3_RP0_CPU0:~]$export PS1='#'
```

```
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 3/rp1
Fri Aug  6 13:03:51.917 IST
[xr-vm_node3_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt| grep rsvp
#exit
logout
#attach location 4/rp0
Fri Aug  6 13:04:10.322 IST
[xr-vm_node4_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 4/rp1
Fri Aug  6 13:04:24.245 IST
[xr-vm_node4_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-#exit
logout
#attach location 5/rp1
Fri Aug  6 13:05:38.152 IST
[xr-vm_node5_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 6/rp0
Fri Aug  6 13:06:00.817 IST
[xr-vm_node6_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
#exit
logout
#attach location 6/rp1
Fri Aug  6 13:06:14.616 IST
[xr-vm_node6_RP1_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
-#exit
logout
#attach location 7/RP0
Fri Aug  6 13:06:34.828 IST
[xr-vm_node7_RP0_CPU0:~]$export PS1='#'
#cd /misc/config
#ls -lrt | grep rsvp
```

Verify the stale RSVP files on the non-NSR pair RPs are deleted.

Note If any non-NSR pair RPs goes for RMA, the new card can have the stale RSVP file. When the new card is inserted, the RSVP file running on NSR pair RP does not auto-delete the stale file. After the new card insertion, when the RP card is ready, you have to perform RSVP Process Restart on the standby RP to delete the stale RSVP file.

Note During the Line Card Chassis (LCC) Rack addition, the new rack RP can have the stale RSVP files. During the migration, the RSVP files running on the NSR pair rack cannot receive notification and stale files do not delete on rack addition. After migration, you have to perform RSVP Process Restart on the standby NSR pair RPs to cleanup the stale files.