Configure Segment Routing Global Block

Local label allocation is managed by the label switching database (LSD). The Segment Routing Global Block (SRGB) is the range of label values preserved for segment routing in the LSD.

About the Segment Routing Global Block

The SRGB label values are assigned as prefix segment identifiers (SIDs) to SR-enabled nodes and have global significance throughout the domain.

Note Because the values assigned from the range have domain-wide significance, we recommend that all routers within the domain be configured with the same range of values.

The default SRGB range is from 16000 to 23999.

Note On SR-capable routers, the default starting value of the dynamic label range is increased from 16000 to 24000, so that the default SRGB label values (16000 to 23999) are available when SR is enabled on a running system. If a dynamic label range has been configured with a starting value of 16000, then the default SRGB label values may already be in use when SR is enabled on a running system. Therefore, you must reload the router after enabling SR to release the currently allocated labels and allocate the SRGB.

Also, if you need to increase the SRGB range after you have enabled SR, you must reload the router to release the currently allocated labels and allocate the new SRGB.

To keep the segment routing configuration simple and to make it easier to troubleshoot segment routing issues, we recommend that you use the default SRGB range on each node in the domain. However, there are instances when you might need to define a different range. For example:

- The nodes of another vendor support a label range that is different from the default SRGB, and you want to use the same SRGB on all nodes.

- The default range is too small.

- To specify separate SRGBs for IS-IS and OSPF protocols, as long as the ranges do not overlap.

Restrictions:

- In Cisco IOS XR release 6.2.x and earlier, LSD label values 0-15999 are reserved. In Cisco IOS XR release 6.3.1 and later, LSD label values 0-14999 are reserved.

- In Cisco IOS XR release 6.2.x and earlier, the maximum SRGB size is 65536. In Cisco IOS XR release 6.3.1 and later, the maximum SRGB size is 262,143.

- The SRGB upper bound cannot exceed the platform's capability.

Note	Label values that are not previously reserved are available for dynamic assignment.

The SRGB can be disabled if SR is not used.

Setup a Non-Default Segment Routing Global Block Range

This task explains how to configure a non-default SRGB range.

SUMMARY STEPS

1. **configure**
2. [**router** {**isis** *instance-id* | **ospf** *process_name*}]
3. **segment-routing global-block** *starting_value ending_value*
4. **commit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure**	
Step 2	[**router** {**isis** *instance-id*	**ospf** *process_name*}] **Example:** `RP/0/RP0/CPU0:router(config)# router isis 1`	(Optional) Enter the **router isis** *instance-id* or **router ospf** *process_name* commands if you want to configure separate SRGBs for IS-IS and OSPF protocols.
Step 3	**segment-routing global-block** *starting_value ending_value* **Example:** `RP/0/RP0/CPU0:router(config-isis)# segment-routing global-block 18000 19999`	Enter the lowest value that you want the SRGB range to include as the starting value. Enter the highest value that you want the SRGB range to include as the ending value.
Step 4	**commit**	

Verify the SRGB configuration:

```
RP/0/RP0/CPU0:router# show mpls label table detail
```

```
Table Label   Owner                              State  Rewrite
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<...snip...>

0     18000   ISIS(A):1                          InUse  No
   Lbl-blk SRGB, vers:0, (start_label=18000, size=2000)
0     24000   ISIS(A):1                          InUse  Yes
   (SR Adj Segment IPv4, vers:0, index=1, type=0, intf=Gi0/0/0/0, nh=10.0.0.2)
```

What to do next

Configure prefix SIDs and enable segment routing.