

Using a Loopback Interface to Create an ABR Router

OSPF requires that all traffic between non-backbone routers pass through the backbone area (Area 0) in order to avoid routing loops. This article discusses how to advertise routes between non-backbone routers.

In the example below Router A has an interface in Area 23, Router B has interfaces in Area 23 and Area 24 and Router C has an interface in Area 24. All are non-backbone routers. We want to advertise routes between routers A and C .



We can accomplish this by configuring a loopback address on Router B and assigning it to Area 0. The loopback and L3 interfaces in Areas 23 and 24 will be assigned to the same Virtual Router. This will turn Router B into an Area Backbone Router and Routers C and A will be able to exchange routes. The loopback interface will be configured as passive, preventing it from forming adjacencies.

Under the Network tab, Interfaces, create the L3 interfaces using the appropriate addressing and zones.

ethernet1/13	L3			11.11.11.254/24
ethernet1/14	L3			10.10.10.254/24

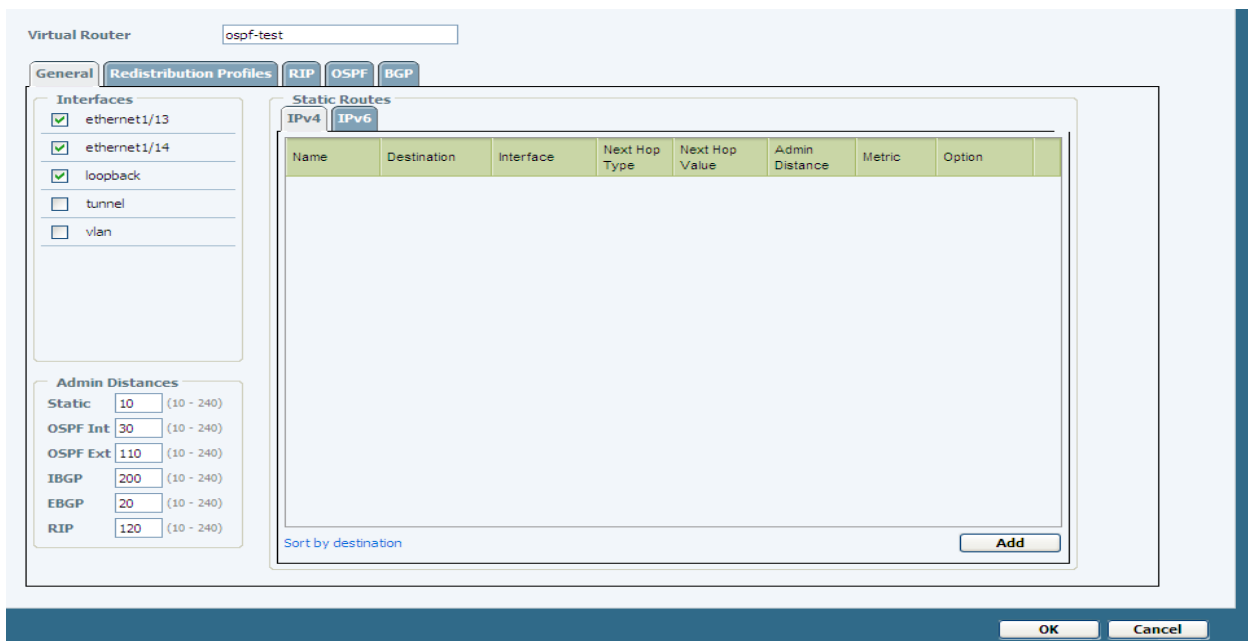
ospf-test	Untagged			ospf-untrust
ospf-test	Untagged			ospf-trust

Create the Loopback address. Assign any IP address and any zone.

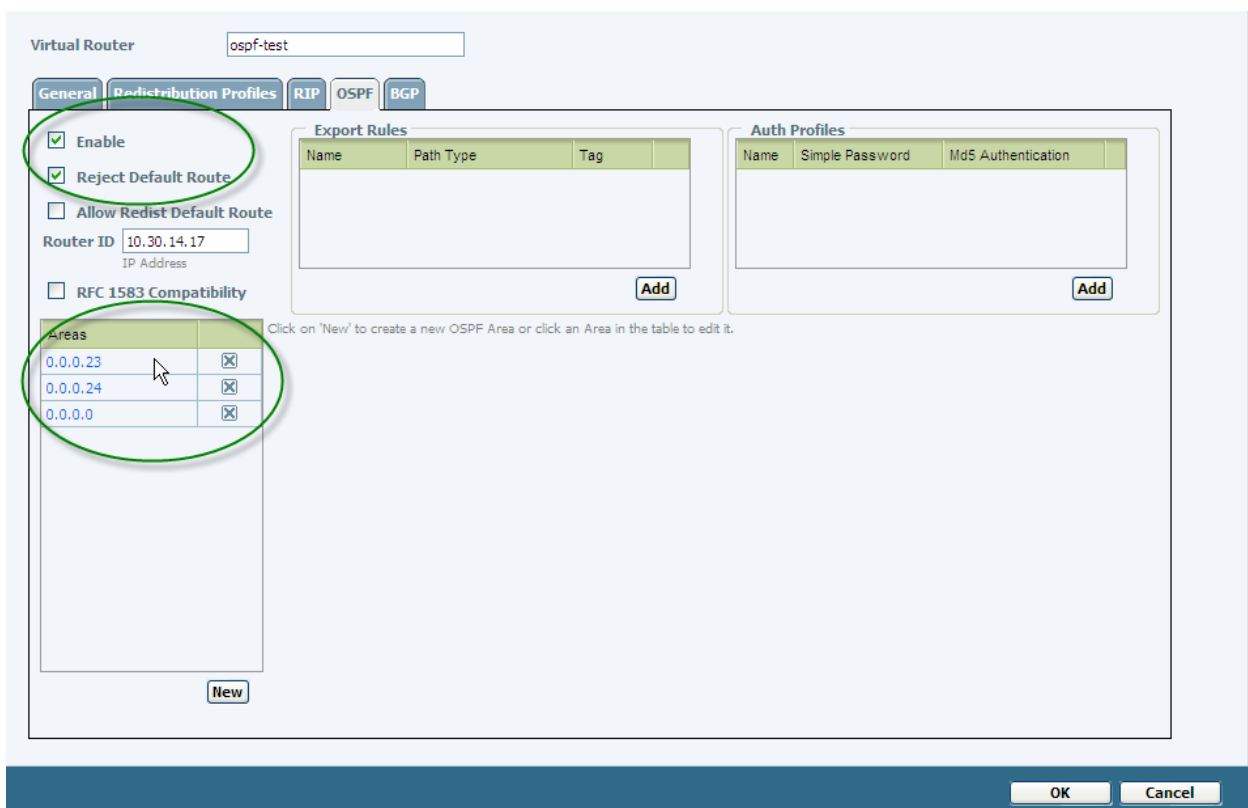
loopback	Loopback			5.5.5.254
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ospf-test				ospf-loop-0000
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Under the Network tab, Virtual Routers, create the profile for the L3 and loopback interfaces.



On the OSPF tab, click New for each area and configure the areas for the L3 interfaces and loopback, enable OSPF and check the box to reject the default route.



When configuring the loopback interface, under the Interface tab, check the Passive box.

The image shows a configuration window for a network interface. The 'Name' is set to 'loopback'. The 'Enable' checkbox is checked. The 'Passive' checkbox is checked and highlighted with a green oval. The 'Link Type' is set to 'broadcast'. The 'Metric' is 10 (range 0-65535). The 'Priority' is 1 (range 0-255). The 'Timing' section includes: 'Hello Interval' 10 (0-3600), 'Dead Counts' 4 (3-20), 'Retransmit Interval' 5 (1-3600), and 'Transmit Delay' 1 (0-3600). The 'Auth Profile' is set to 'none'. The 'Neighbors' section is empty, with an 'Add' button and an example IP address 'Ex. 10.1.7.1'. At the bottom are 'OK' and 'Cancel' buttons.

Name	loopback
Enable	<input checked="" type="checkbox"/>
Passive	<input checked="" type="checkbox"/>
Link Type	broadcast
Metric	10 (0 - 65535)
Priority	1 (0 - 255)
Timing	
Hello Interval	10 (0 - 3600)
Dead Counts	4 (3 - 20)
Retransmit Interval	5 (1 - 3600)
Transmit Delay	1 (0 - 3600)
Auth Profile	none
Neighbors	
<input type="text"/>	<input type="button" value="Add"/>
Ex. 10.1.7.1	

OK Cancel

