Chapter 22

Routing

The Routing window displays the configured static routes and Routing Internet Protocol, (RIP), Open Shortest Path First (OSPF), and Extended Interior Gateway Routing Protocol (EIGRP) configured routes. From this window, you can review the routes, add new routes, edit existing routes, and delete routes.

Note
Static and dynamic routes configured for GRE over IPSec tunnels will appear in this window. If you delete a routing entry that is used for GRE over IPSec tunneling in this window, that route will no longer be available to the tunnel.

Static Routing

Destination Network
This is the network that the static route provides a path to.

Forwarding
This is the interface or IP address through which packets must be sent to reach the destination network.

Optional
This area shows whether a distance metric has been entered, and whether or not the route has been designated as a permanent route.
What Do You Want To Do?

<table>
<thead>
<tr>
<th>If you want to:</th>
<th>Do this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add a static route.</td>
<td>Click <strong>Add</strong>, and create the static route in the Add a Static Route window.</td>
</tr>
<tr>
<td>Edit a static route.</td>
<td>Select the static route, and click <strong>Edit</strong>. Edit the route information in the IP Static Route window. When a route has been configured that SDM does not support, the Edit button is disabled.</td>
</tr>
<tr>
<td>Delete a static route.</td>
<td>Select the static route, and click <strong>Delete</strong>. Then, confirm the deletion in the warning window.</td>
</tr>
<tr>
<td>Delete all static routes.</td>
<td>Click <strong>Delete All</strong>. Then, confirm the deletion in the warning window.</td>
</tr>
</tbody>
</table>

**Note**

- If SDM detects a previously configured static route entry that has the next hop interface configured as the “Null” interface, then the static route entry will be read-only.
- If SDM detects a previously configured static route entry with “tag” or “name” options, that entry will be read-only.
- If you are configuring a Cisco 7000 router, and the interface used for a next hop is unsupported, that route will be marked as read only.
- Read-only entries cannot be edited or deleted using SDM.

Dynamic Routing

This portion of the window allows you to configure RIP, OSPF, and EIGRP dynamic routes.

**Item Name**

If no dynamic routes have been configured, this column contains the text RIP, OSPF, and EIGRP. When one or more routes have been configured, this column contains the parameter names for the type of routing configured.
Add or Edit IP Static Route

Use this window to add or edit a static route.

Destination Network

Enter the destination network address information in these fields.
**Prefix**
Enter the IP address of the destination network. For more information, refer to Available Interface Configurations.

**Prefix Mask**
Enter the destination address subnet mask.

**Make this the default route**
Check this box to make this the default route for this router. A default route forwards all the unknown outbound packets through this route.

**Forwarding**
Specify how to forward data to the destination network.

**Interface**
Click Interface if you want to select the interface of the router that forwards the packet to the remote network.

**IP Address**
Click IP Address if you want to enter the IP Address of the next hop router that receives and forwards the packet to the remote network.

**Optional**
You can optionally provide a distance metric for this route, and designate it as a permanent route.

**Distance Metric for this route**
Enter the metric value that has to be entered in the routing table. Valid values are 1 through 255.

**Permanent Route**
Check this box to make this static route entry a permanent route. Permanent routes are not deleted even if the interface is shut down or the router is unable to communicate with the next router.
Add or Edit an RIP Route

Use this window to add or edit a Routing Internet Protocol (RIP) route.

RIP Version

The values are RIP version 1, RIP version 2, and Default. Select the version supported by the Cisco IOS image that the router is running. When you select version 1, the router sends version 1 RIP packets and can receive version 1 packets. When you select version 2, the router sends version 2 RIP packets and can receive version 2 packets. When you select Default, the router sends version 1 packets, and can receive both version 1 and version 2 RIP packets.

IP Network List

Enter the networks on which you want to enable RIP. Click Add to add a network. Click Delete to delete a network from the list.

Available Interface List

The available interfaces are shown in this list.

Make Interface Passive

Check the box next to the interface if you do not want it to send updates to its neighbor. The interface will still receive routing updates, however.

Add or Edit an OSPF Route

Use this window to add or edit an Open Shortest Path First (OSPF) route.

OSPF Process ID

This field is editable when OSPF is first enabled; it is disabled once OSPF routing has been enabled. The process ID identifies the router’s OSPF routing process to other routers.
**IP Network List**

Enter the networks that you want to create routes to. Click **Add** to add a network. Click **Delete** to delete a network from the list.

**Network**

The address of the destination network for this route. For more information, refer to Available Interface Configurations.

**Mask**

The subnet mask used on that network.

**Area**

The OSPF area number for that network. Each router in a particular OSPF area maintains a topological database for that area.

---

**Note**

If SDM detects previously configured OSPF routing that includes “area” commands, then the IP Network List table will be read-only and cannot be edited.

---

**Available Interface List**

The available interfaces are shown in this list.

**Make Interface Passive**

Check the box next to the interface if you do not want it to send updates to its neighbor. The interface will still receive routing updates, however.

**Add**

Click **Add** to provide an IP address, network mask, and area number in the IP address window.

**Edit**

Click **Edit** to edit the IP address, network mask, or area number in the IP address window.
Add or Edit EIGRP Route

Use this window to add or delete an Extended IGRP (EIGRP) route.

Autonomous System Number

The autonomous system number is used to identify the router’s EIGRP routing process to other routers.

IP Network List

Enter the networks that you want to create routes to. Click Add to add a network. Click Delete to delete a network from the list.

Available Interface List

The available interfaces are shown in this list.

Make Interface Passive

Check the box next to the interface if you do not want it to send updates to its neighbor. The interface will neither send nor receive routing updates.

⚠️ Caution

When you make an interface passive, EIGRP suppresses the exchange of hello packets between routers, resulting in the loss of their neighbor relationship. This not only stops routing updates from being advertised, but also suppresses incoming routing updates.

Add

Click Add to add a destination network IP address to the Network list.

Delete

Select an IP address, and click Delete to remove an IP address from the Network list.