Configuring the Cisco SRE Service Module Interfaces—Cisco IOS Version 15.1(2)T

Note If the Generation 2 of the Cisco Integrated Services Router (ISR G2) in which the Cisco SRE Service Module is installed is running Cisco IOS version 15.1(2)T, and you do not want to upgrade to the supported Cisco IOS version (see the "Verifying the Router, Cisco SRE Service Module, and Cisco IOS Software Version Compatibility" section on page 2-2), follow the procedure documented in this appendix to configure the Cisco SRE Service Module interfaces.

Caution You cannot configure VLANs for Cisco SRE Service Modules if the ISR G2 is running Cisco IOS version 15.1(2)T.

This chapter provides information about how to configure the Cisco SRE Service Module interfaces to run the Cisco SRE-V System software.

This chapter contains the following sections:

- Basic Workflow for Configuring the Cisco SRE Service Module Interfaces, page A-1
- Cisco SRE Service Module Interfaces Overview, page A-2
- Configuring the Cisco SRE Service Module Interfaces, page A-5

Basic Workflow for Configuring the Cisco SRE Service Module Interfaces

1. Configure the service-module interface on the router. See the "Configuring the Service-Module Interface on the Router" section on page A-6.

2. Configure the MGF interface on the module. See the "Configuring the MGF Interface on the Module" section on page A-8.

Cisco SRE Service Module Interfaces Overview

The host router and the Cisco SRE Service Module use several interfaces for internal and external communication. Use the Cisco IOS CLI commands to configure each of the interfaces on the router.

Before configuring the interfaces, make sure that you have the following information for entering the Cisco SRE Service Module command environment:

- IP address of the Cisco router that contains the Cisco SRE Service Module.

- Username and password for logging into the router.

- Slot and unit number of the Cisco SRE Service Module.

The service module communicates with the host router through two internal Gigabit Ethernet (GE) interfaces:

- One GE interface connects to the router Peripheral Component Interconnect Express (PCIe). Use the Cisco IOS CLI to configure and manage this interface. This interface is sm *slot*/0.

- The other GE interface connects to the multi-gigabit fabric (MGF). Use the Cisco IOS CLI to configure the IP address of the MGF interface for the VMware vSphere Hypervisor™. This configuration allows the VSphere Client to communicate with the VMware vSphere Hypervisor™. This interface is sm *slot*/1.

- There is a third Gigabit Ethernet interface, which is located on the external face plate of the Cisco SRE Service Module. This Gigabit Ethernet interface is configured and managed by the VMware vSphere Hypervisor™.

See Figure A-1.

Figure A-1   Host Router and Cisco SRE Service Module Interfaces
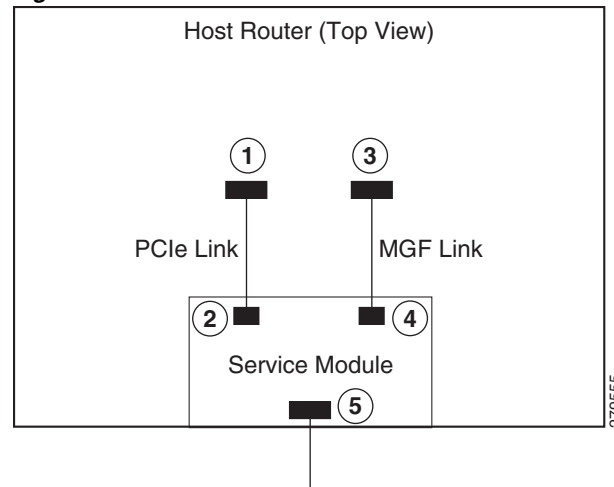
Callout	Location	Cisco SRE Service Module Interface	Slot and Port	Configure IP Address	Configure From
1	PCIe Link	Service-Module interface	*slot*/0	IP address of the router side of the interface **Example:** `Router(config-if)# ip address 10.0.0.1 255.255.255.0`	Cisco IOS CLI
2				IP address of the module side of the interface **Example:** `Router(config-if)# service-module ip address 10.0.0.2 255.255.255.0`	

Callout	Location	Cisco SRE Service Module Interface	Slot and Port	Configure IP Address	Configure From
3	MGF Link	MGF interface (Module interface to manage virtual machines)	*slot*/1	IP address of the router side of the interface **Example:** `Router(config-if)# ip address 10.10.10.1 255.255.255.0`	Cisco IOS CLI
4				IP address of the module side of the interface **Example:** `Router(config-if)# service-module ip address 10.10.10.2 255.255.255.0`	
5	Module Faceplate	External interface (Module interface to external link)	—	—	VMware vSphere Hypervisor™

See the following sections for more information:

- Service-Module Interface, page A-4
- MGF Interface, page A-4
- External Service Module Interface, page A-5

Service-Module Interface

The service-module interface is used to access the service module console for configuration. Visible only to the Cisco IOS software on the host router, the service-module interface is an internal GE interface between the router and the Cisco SRE Service Module. The service-module interface connects to the router PCIe and all configuration and management of the service-module interface is performed using the Cisco IOS CLI.

MGF Interface

The MGF interface enables the Cisco SRE Service Module to communicate with one or more service modules installed in the host router. Configuration of the MGF interface is performed from the Cisco IOS CLI. The Cisco-authorized application running that is on the Cisco SRE Service Module manages the connections. For more information about configuring MGF, see the "Multi-Gigabit Fabric on the Router" chapter in the *Cisco 3900 Series, 2900 Series, and 1900 Series Integrated Services Routers Software Configuration Guide* on Cisco.com.

External Service Module Interface

The external service-module interface can be used as a backup interface to connect the VMware vSphere Hypervisor directly to the LAN. Unlike the internal interfaces, the external interface is primarily controlled and managed by the VMware vSphere Hypervisor. The traffic does not go into the router unless the VMware vSphere Hypervisor is configured to forward the traffic into the router through the MGF interface.

Configuring the Cisco SRE Service Module Interfaces

This section describes how to configure basic network parameters for the Cisco SRE Service Module using the Cisco IOS CLI. It contains the following sections:

Perquisites for Configuring the Cisco SRE Service Module Interfaces

Cisco Router Prerequisites

Make sure that your Cisco router is running the appropriate Cisco IOS software version and recognizes the Cisco SRE Service Module.

Cisco SRE Service Module Prerequisites

> **Note**   In most cases, the routers are shipped with the Cisco SRE Service Module already installed in them.

Make a note of the Cisco SRE Service Module slot location in the host router:

- *slot*—ID of the host router chassis slot in which the Cisco SRE Service Module resides. After you install the module, you can obtain this information by using the Cisco IOS software CLI **show running-config** command.
- *port*—ID of the Network Interface Card (NIC) on the Cisco SRE Service Module. The value is 0 for the PCIe interface and 1 for the MGF interface.

FTP/SFTP/HTTP Server Prerequisites

- If you need to download a new image, access a FTP, Secure FTP (SFTP), or HTTP server.
- Verify that the FTP/SFTP/HTTP server is accessible.

Configuring the Service-Module Interface on the Router

Configure the internal interface between the Cisco SRE Service Module and the host router. This initial configuration allows you to access the service module to install and configure the Cisco SRE-V application.

PREREQUISITES

See the "Perquisites for Configuring the Cisco SRE Service Module Interfaces" section on page A-5.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**

2. **configure terminal**

3. **interface sm** *slot***/0**

4. **ip address** *router-side-ip-address subnet-mask*
   or
   ip unnumbered *type number*

5. **service-module ip address** *module-side-ip-address subnet-mask*

6. **service-module ip default-gateway** *gateway-ip-address*

7. **no shut**

8. **end**

9. **copy running-config startup-config**

10. **show running-config**

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	

Step 1	`enable`
	`<password>`
	
	Example:
	`Router> enable`
	`Router> <password>`
	`Router#`
		Enters privileged EXEC mode on the host router. Enter your password if prompted.

Step 2	`configure terminal`
	
	Example:
	`Router# configure terminal`
		Enters global configuration mode on the host router.

Step 3	`interface sm slot/0`
	
	Example:
	`Router(config)# interface sm 1/0`
		Enters interface configuration mode for the slot and port where the Cisco SRE Service Module resides.

	Command or Action	Purpose

Step 4	`ip address` *router-side-ip-address subnet-mask*
	
	or
	
	`ip unnumbered` *type number*
	`exit`
	`ip route` *service-module-ip-address subnet-mask*
	`sm` *slot***/0**
	
	Example:
	`Router(config-if)# ip address 10.0.0.1`
	`255.255.255.0`
	
	 or
	
	`Router(config-if)# ip unnumbered`
	`gigabitethernet 1/0`
	`Router(config-if)# exit`
	`Router(config)# ip route 192.168.100.60`
	`255.255.255.255 SM1/0`
		Specifies the IP address for the router side of the interface.
		
		• *router-side-ip-address subnet-mask*—IP address and subnet mask for the router.
		
		or
		
		Enables IP processing on an interface without assigning an explicit IP address to the interface.
		
		• *type*—Type of interface on which the router has an assigned IP address.
		
		• *number*—Number of the interface on which the router has an assigned IP address.
		
		Note The unnumbered interface cannot be another unnumbered interface.
		
		Exit interface mode, and then enter the **ip route** command.
		
		• *service-module-ip-address subnet-mask*—IP address and subnet mask of the service module.
		
		• *slot/0*—slot and port where the Cisco SRE Service Module resides.

Step 5	`service-module ip address`
	module-side-ip-address subnet-mask
	
	Example:
	`Router(config-if)# service-module ip address`
	`10.0.0.2 255.255.255.0`
		Specifies the IP address for the module side of the interface.
		
		• *module-side-ip-address*—IP address for the module.
		
		• *subnet-mask*—Subnet mask to append to the IP address; must be in the same subnet as the host router.

Step 6	`service-module ip default-gateway`
	gateway-ip-address
	
	Example:
	`Router(config-if)# service-module ip`
	`default-gateway 10.0.0.1`
		Specifies the IP address of the default gateway for the module.
		
		• *gateway-ip-address*—IP address for the default router.

Step 7	`no shut`
	
	Example:
	`Router# no shut`
		Causes the interface to be administratively down.

Step 8	`end`
	
	Example:
	`Router(config-if)# end`
		Returns to global configuration mode on the host router.

	Command or Action	Purpose

Step 9	`copy running-config startup-config`
	
	Example:
	`Router# copy running-config startup-config`
		Saves the new running configuration of the router as the startup configuration.

Step 10	`show running-config`
	
	Example:
	`Router# show running-config`
		Displays the running configuration of the router so that you can verify the address configurations.

Example

The following example shows the configuration of the internal interface between the Cisco SRE Service Module and the router:

```
interface SM1/0
 ip address 10.0.0.1 255.255.255.0
 service-module ip address 10.0.0.2 255.255.255.0
 service-module ip default-gateway 10.0.0.1
```

Configuring the MGF Interface on the Module

Cisco 3900 series and 2900 series ISR G2s use the MGF interface to inter-communicate with the router. Next generation module drivers integrate with the MGF to perform port configurations, configure packet flow, and control traffic buffering.

PREREQUISITES

See the "Perquisites for Configuring the Cisco SRE Service Module Interfaces" section on page A-5.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**
2. **configure terminal**
3. **interface sm** *slot***/1**
4. **ip address** *router-side-ip-address subnet-mask*
5. **service-module ip address** *module-side-ip-address subnet-mask*
6. **end**
7. **copy running-config startup-config**
8. **service module sm** *slot***/0 session**

From the Console Manager Interface

9. **hypervisor set ip default-gateway** *module-side-ip-address*
10. Press **Control-Alt-6 x**.

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	
Step 1	**enable** *<password>* **Example:** Router> enable Router> *<password>* Router#	Enters privileged EXEC mode on the host router. Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode on the host router.
Step 3	**interface sm** *slot***/1** **Example:** Router(config)# interface sm 1/1	Enters interface configuration mode for the slot and port where the Cisco SRE Service Module resides.
Step 4	**ip address** *router-side-ip-address subnet-mask* **Example:** Router(config-if)# ip address 10.10.10.1 255.255.255.0	Specifies the IP address for the router side of the interface. • *router-side-ip-address*—IP address for the router. • *subnet-mask*—Subnet mask to append to the IP address.
Step 5	**service-module ip address** *module-side-ip-address subnet-mask* **Example:** Router(config-if)# service-module ip address 10.10.10.2 255.255.255.0	Specifies the IP address for the module side of the interface. • *module-side-ip-address*—IP address for the module. • *subnet-mask*—Subnet mask to append to the IP address; must be in the same subnet as the host router.
Step 6	**end** **Example:** Router(config-if)# end	Returns to global configuration mode on the host router.
Step 7	**copy running-config startup-config** **Example:** Router# copy running-config startup-config	Saves the new running configuration of the router as the startup configuration.
Step 8	**service module sm** *slot***/0 session** **Example:** Router# service module sm 1/0 session Trying 10.0.0.1, 2065 .. Open	Begins a session on the Cisco SRE Service Module. To start a configuration session, press **Enter**.

Command or Action	Purpose
From the Console Manager Interface—Enter commands in EXEC mode.	
Step 9 **hypervisor set ip default-gateway** *router-side-ip-address* **Example:** SRE-Module# hypervisor set ip default-gateway 10.10.10.1	Specifies the default gateway IP address that the VMware vSphere Hypervisor will use to communicate to the VSphere client. • *router-side-ip-address*—IP address that you configured for the router side of the interface. See Step 4.
Step 10 Press **Control-Alt-6 x**.	Closes the service module session and returns to the host router CLI. **Note** The service module session stays up until you clear it in the next step. While it remains up, you can return to it from the router CLI by pressing **Enter**.

Example

The following example shows the configuration of the interface between the Cisco SRE Service Module and the MGF.

```
interface SM1/1
 ip address 10.10.10.1 255.255.255.0
 service-module ip address 10.10.10.2 255.255.255.0
```