



RMS Configuration

Before you can use an RMS with Cisco IPICS or perform the RMS management tasks that are described in [Chapter 2, “Administration Console: System Administrator Tasks,”](#) you must configure the RMS. Cisco IPICS will not support an RMS that is not configured as described in this appendix.

When you set up an RMS, follow these guidelines:

- Configure at least two T1 controllers and assign DS0 groups to each controller. In addition, allocate only as many DS0s on a controller as the RMS can support simultaneously. The ports that you allocate must start with port 0 and must be sequential. Typically, a controller will support 24 DS0s, but your controller may support fewer, depending on the number of available DSPs. Allocating more DS0s than a controller has resources to support can cause loss of voice and voice quality issues.
- Configure T1 controllers for individual voice ports by including this command in the router configuration.

DS0-group *DS0-group-number* **timeslots** *timeslot-list* **type e&m-lmr**

Where:

- **DS0-group** *DS0-group number* identifies the DS0 group and must be a value from 0 to 23. DS0 groups must start with 0 and must be sequential.
- **timeslots** *timeslot-list* specifies a single time-slot number. For T1, allowable values range from 1 to 24.

For example,

```
DS0-group 0 timeslots 24 type e&m-lmr
DS0-group 1 timeslots 1 type e&m-lmr
...
DS0-group 23 timeslots 23 type e&m-lmr
```

These commands specify the DS0 time slots that define logical voice ports on a T1 controller and specify the signaling type by which the router communicates with the PSTN.

If you want to configure only 12 DS0s, configure DS0 groups 0 through 11 in this example.

To configure an RMS to interact with the Cisco IPICS sever, perform the following steps.



Note

The following steps uses sparse-dense-mode. The design of your multicast network may require you to use an ip pim mode other than sparse-dense-mode.

Procedure

- Step 1** Configure DS0 groups on controllers by including the following commands in the router configuration.



Note

The clock command should be used for only one of the two controllers in a loopback.

Use these commands for the first controller in a loopback pair:

```
Router(config)#controller T1 1/0
Router(config-controller)#framing esf
Router(config-controller)#clock source internal
Router(config-controller)#linecode b8zs
Router(config-controller)#cablelength short 133
Router(config-controller)#DS0-group 0 timeslots 24 type e&m-lmr
Router(config-controller)#DS0-group 1 timeslots 1 type e&m-lmr
Router(config-controller)#DS0-group 2 timeslots 2 type e&m-lmr
...
Router(config-controller)#no shutdown
```

Use these commands for the second controller in a loopback pair:

```
Router(config)#controller T1 1/1
Router(config-controller)#framing esf
Router(config-controller)#linecode b8zs
Router(config-controller)#cablelength short 133
Router(config-controller)#DS0-group 0 timeslots 24 type e&m-lmr
Router(config-controller)#DS0-group 1 timeslots 1 type e&m-lmr
Router(config-controller)#DS0-group 2 timeslots 2 type e&m-lmr
...
Router(config-controller)#no shutdown
```

- Step 2** Enable multicast routing in the router by including the IP multicast-routing command in the router configuration:

```
Router(config)#ip multicast-routing
```

- Step 3** Create a virtual interface for multicast communication by including the following commands in the router configuration.

```
Router(config)#interface Vif1
Router(config-if)#ip address ip_address subnet_mask
Router(config-if)#ip pim sparse-dense-mode
```

- Step 4** Create a loopback interface for voice signaling and media by including these command in the router configuration:

```
Router(config)#interface Loopback0
Router(config-if)#ip address ip_address subnet_mask
Router(config-if)#ip pim sparse-dense-mode
```

- Step 5** Assign voice signaling and media to the loopback interface by including these command in the router configuration:

```
Router(config)#voice service voip
Router(conf-voi-serv)#sip
Router(conf-serv-sip)#bind control source-interface Loopback0
Router(conf-serv-sip)#bind media source-interface Loopback0
```

- Step 6** Enable multicast routing for each interface that will participate in multicast traffic by including this command in the router configuration for each participating interface:

```
Router(config-if)#ip pim sparse-dense-mode
```

- Step 7** Create a voice class that will be applied to all voice configurations by including these command in the router configuration:

```
Router(config)#voice class permanent 1
Router(config-class)#signal timing oos timeout disabled
Router(config-class)#signal keepalive disabled
Router(config-class)#signal sequence oos no-action
```

- Step 8** Create a cryptographic key to enable SSL (HTTPS) secure access from the Cisco IPICS server by including this command in the router configuration

```
Router(config)#ip http secure-server
```

- Step 9** Enable log in through Telnet and SSH by including these command in the router configuration:

```
Router(config)#line vty 0 15
Router(config-line)#transport input telnet ssh
Router(config-line)#exec-timeout 22 0
Router(config-line)#privilege level 15
Router(config-line)#login local
```



Note

Optimally, set exec-timeout to 22 (22 minutes). Setting to a shorter time such as 5 or 10 minutes can cause undesirable delays every time that Cisco IPICS accesses the router, such as when you make a change to a VTG. Setting a long time such as 60 minutes can cause authorized logins to accumulate and cause the router to run out of open lines. Do not set exec-timeout to 0.

- Step 10** Take these actions:

- a.** Create a user name and password for the router by including this command in the router configuration:

```
Router(config)#username username privilege 15 password 0 password
```

- b.** Apply the same *password* to the enable password on the router by including this command in the router configuration:

```
Router(config)#enable password 0 password
```

You will enter this user name and password in the Cisco IPICS Administration Console when you configure the RMS.

- Step 11** Configure SIP inactivity timeout by including these commands in the router configuration:

```
Router(config)#ip rtcp report interval 5001
Router(config)#gateway
Router(config-gateway)#timer receive-rtcp 5
```

- Step 12** Configure the list of codecs that Cisco IPICS will support by including these command in the router configuration:

```
Router(config)#voice class codec 1
Router(config-class)#codec preference 1 g729r8
Router(config-class)#codec preference 2 g711ulaw
```

- Step 13** Create the following inbound dial peer by including the following commands in the router configuration.

These commands cause the default SIP PMC connection to have vad off.

```
Router(config)#dial-peer voice 555 voip
Router(config-dial-peer)#voice-class codec 1
Router(config-dial-peer)#session protocol sipv2
Router(config-dial-peer)#incoming called-number .
Router(config-dial-peer)#no vad
```

- Step 14** Reset the router command prompt by including this command in the router configuration:

```
Router(config)#no prompt
```

- Step 15** Execute the following command and verify that the output reflects the modifications that you have made in this procedure:

```
Router#show running-config
```

- Step 16** Execute the following command to save the changes that you have made:

```
Router#copy running-config startup-config
```

For detailed configuration information, refer to the Land Mobile Radio over IP documentation at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123newft/123t/123t_7/lmrip/

