



CHAPTER 8

Troubleshooting Tips for the PMC Application

This chapter provides information about basic troubleshooting tips and error messages that you may encounter when you use the PMC application.

This chapter includes the following sections:

- [Troubleshooting PMC Application Problems, page 8-1](#)
- [Analyzing PMC Error Conditions, page 8-29](#)

Troubleshooting PMC Application Problems

The following sections describe how to resolve problems with the PMC application:

- [Resolving PMC Execution Issues, page 8-2](#)
- [Generating a PMC Installation Log File, page 8-3](#)
- [Using the PMC Installer with an Encrypted File System, page 8-5](#)
- [Making PMC Configuration File Changes, page 8-6](#)
- [Using the PMC Optional Settings, page 8-6](#)
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- [Configuring the Audio Settings, page 8-7](#)
- [Using Cisco Security Agent with the PMC, page 8-9](#)
- [PMC Coexistence with Other Voice Applications, page 8-10](#)

- [Troubleshooting One-Way Audio, page 8-10](#)
- [Troubleshooting Voice Quality Issues, page 8-14](#)
- [Resolving Unknown Publisher Errors with Windows XP SP2, page 8-14](#)
- [Resolving Cisco IPICS Server Administration Console Access Issues with Internet Explorer, page 8-15](#)
- [Troubleshooting PMC Connectivity Issues, page 8-15](#)
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Resolving PMC Execution Issues

The PMC application allows only one instance of the PMC application to be open on a given PMC client machine. If you launch the PMC, then immediately close it and attempt to relaunch it, the PMC may terminate unexpectedly because the first instance of the PMC has not completed its cleanup procedures. If this situation occurs, wait at least 10 seconds before you restart the PMC.

If you find that you cannot launch the PMC after you have recently closed the application, it may be because the PMC.exe process is still running on the PMC client machine.

To verify that the PMC.exe process is still running and to end the task, if necessary, follow this procedure:

Procedure

Step 1 On the client machine, press **Ctrl-Alt-Delete** to launch the Windows Task Manager application.

Step 2 Click **Task Manager**.

Three tabs display on Windows Task Manager: Applications, Processes, and Performance. An additional tab, Networking, displays in the Windows XP Task Manager.

- Step 3** Click the **Processes** tab.
- Step 4** Click **Image Name** to alphabetize the list of running processes.
Scroll down through this list to look for the PMC.exe process.
- Step 5** Click **PMC.exe** to highlight or right-click **PMC.exe**; then, click **End Process**.
A warning message displays to ask if you are sure that you want to terminate this process.
- Step 6** Click **Yes**.
- Step 7** Close Windows Task Manager by clicking the “X” in the upper right corner.
-

**Note**

After you close the PMC, you may need to wait about 30 seconds before you can relaunch the application to provide sufficient time for the PMC to terminate its processes.

Generating a PMC Installation Log File

If you encounter any of the following problems when you try to run the pmcsetup.exe installation file, you can generate a PMC installation log file to help identify and resolve the issue:

- You do not get a response when you attempt to execute the pmcsetup.exe file
- The installation begins to run but it does not complete successfully
- You receive an error that indicates an unsuccessful installation
- You do not see the Cisco IPICS PMC shortcut on the PMC client machine desktop or the Cisco IPICS PMC entry in your programs menu (**Start > Programs > Cisco IPICS > PMC**).

If you experience any of these errors, you can use the following procedure to generate the PMC installation log file from the pmcsetup.exe self-extracting binary file that contains the pmcinst.exe PMC installation file and the pmc.ini file. This log file can provide valuable information to Cisco support personnel to assist in your troubleshooting efforts.

To generate the PMC installation log file, perform the following procedure:

Procedure

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- Step 1** Create a **C:\temp** directory in Windows, if this directory does not already exist.
- Step 2** Use Windows Explorer to navigate to the location where you saved the `pmcsetup.exe` file, as described in the [“Downloading and Installing the PMC Application” section on page 2-4](#).
- Step 3** Locate the **pmcsetup.exe** file in this stored location and click to highlight the file; then, right-click the **pmcsetup.exe** file and click **Copy**.
- Step 4** Use Windows Explorer to navigate to the **C:\temp** directory and right-click in an open area in this directory; then, click **Paste** to copy the **pmcsetup.exe** file to the **C:\temp** directory.



Note Make sure that the **C:\temp** directory does not contain any versions of the `pmcinst.exe` or `pmc.ini` files. If either file is present, you must rename the existing files or delete them.

- Step 5** Open up a command line prompt (**Start > Run > cmd**) on the PMC client machine to access the **C:\temp** directory.
- Step 6** To generate the PMC installation log file, enter the following command from the **C:\temp** directory:

pmcsetup.exe -log

The `pmcsetup.log` file appears in the **C:\temp** directory.

If the PMC is already installed on your client machine, you may see a message that asks if you want to upgrade the PMC. Make sure that you click **Yes** to continue.

- Step 7** To close the command line prompt, enter the **exit** command.
- Step 8** After you have created the PMC installation log file, contact your Cisco support personnel for further assistance.
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Using the PMC Installer with an Encrypted File System

The PMC installer uses the Temp folder (%temp% environment variable) on your PMC client machine during the installation process. If the Temp folder has been encrypted by using the Encrypted File System (EFS), the PMC installer cannot proceed. In this situation, the PMC installer attempts to use the TMP or the SystemRoot folder to continue with the installation.

If the PMC installation cannot proceed because of encrypted files on the PMC client machine, you can modify the %temp% and %tmp% environment variables to point at nonencrypted folders and then rerun the PMC installation.

To identify the folders that are specified by the %temp% and %tmp% environment variables to determine if they are encrypted, perform the following procedure:

Procedure

-
- Step 1** On the PMC client machine, open a command line prompt by choosing **Start > Run** and entering **cmd**.
- A command line window displays.
- Step 2** At the command line, enter the following command:
- ```
C:\ echo %temp%
```
- The location of the TEMP folder displays.
- If the folder that is specified by the %temp% environment variable is encrypted, you can assign the %temp% environment variable to a folder that is not encrypted.
- Step 3** To reassign the %temp% environment variable to a nonencrypted folder, enter the following command:
- ```
C:\ set TEMP=<new location>
```
- where:
- <new location>* specifies the new, nonencrypted folder for the %temp% environment variable.
- The new location of the TEMP folder displays.
- Step 4** To reassign the %tmp% environment variable to a nonencrypted folder, enter the following command:
- ```
C:\ set TMP=<new location>
```

where:

*<new location>* specifies the new, nonencrypted folder for the %tmp% environment variable.

**Step 5** Rerun the PMC installation by entering the following command:

**C:\ run pmcsetup.exe**

**Step 6** To close the command line prompt, enter the **exit** command.

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For more information about the Encrypted File System, refer to the Microsoft support site at <http://support.microsoft.com/>

## Making PMC Configuration File Changes

If you have the PMC application open and you need to make changes to the PMC configuration file, make sure that you close the PMC application before you edit the configuration file on your hard drive; otherwise, the PMC can overwrite your configuration changes. Be sure to save any changes that you make to the configuration file.

## Using the PMC Optional Settings

The optional settings menu can aid your troubleshooting efforts by providing access to additional submenus that are not normally viewable or editable, such as the PMC log files. For example, you can manually turn on and turn off logging for individual PMC log files and you can also set debug levels.

These submenu items become available by using the PMC optional settings. See the “[Using the Optional Settings Menu](#)” section on page 5-16 for additional information and caveats about using the PMC optional settings.



### Caution

You should only use these optional settings to aid troubleshooting and debugging efforts in emergency situations, such as not being able to connect to the server, and as directed by your system administrator or Cisco support personnel. To ensure system integrity, make sure that you contact your system administrator before you use any of these optional settings submenus.

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## Resolving Footswitch/USB Device Issues

Cisco IPICS supports the use of a device that simulates key down and key up events, such as a footswitch or other USB device. This device must also be capable of simulating key held events as if you were holding down a key on a keyboard.

If you use a footswitch or similar USB device, and you encounter a situation where the All Talk channel button flickers between orange and yellow, you may not have properly configured the device.

Make sure that the device can generate key down events when you hold down the footswitch pedal followed by a key up event when you release the pedal (to simulate pressing and holding a key on a keyboard and then releasing it).

Refer to the product documentation that you received with your USB device for details about how to configure it to properly function with Cisco IPICS.

For more information about using a footswitch or other USB device, see the [“Using Keyboard Mapping” section on page 4-21](#).

## Configuring the Audio Settings

This section contains information about configuring the audio settings and it includes the following topics:

- [Using a USB DSP Headset with the PMC, page 8-8](#)
- [Checking the Microphone with the PMC, page 8-8](#)

After you have installed the PMC application, check the current settings for the playback and recording audio devices on your client machine to ensure that you are using the preferred or default sound devices with the PMC.



### Tip

If you change your audio settings while you are running the PMC, you may need to restart the PMC for the changes to become effective.



### Note

It is very important that you choose the preferred or default sound device option in the Windows audio settings in order to limit echo that can be caused by multiple microphones picking up traffic on the same machine.

For tips about how to ensure the best possible voice quality when you use the PMC, see the [“Voice Quality Tips” section on page 2-11](#).

## Using a USB DSP Headset with the PMC

When you use a USB DSP headset (that is, a headset that includes its own sound card) with the Windows operating system, Windows may configure the USB DSP headset as the default speaker and microphone. Therefore, make sure that you connect the USB DSP headset to the PMC client machine before you launch the PMC.

If you launch the PMC after you plug the headset into your PMC client machine, the PMC does not automatically remember the audio setting for the USB DSP headset; instead, the PMC reverts to the Windows operating system’s default audio settings. See the [“Using a USB DSP Headset with the PMC” section on page 2-8](#) for more information about checking and reconfiguring the Windows audio settings for use with a USB DSP headset.



### Note

If you use the microphone on a USB headset for an extended period of time, your voice may become unintelligible. If this problem occurs, close the PMC and unplug the USB headset from the PMC client machine. Then, plug the USB headset back into the PMC client machine and restart the PMC.

## Checking the Microphone with the PMC

You should also check the audio recording and playback capability of the microphone on your PMC client machine by accessing the Microsoft Sound Recorder to record your voice and then listen to the recording. (Make sure that you have an audio input device connected to your machine.)

- Make sure that you use a high-quality microphone with the PMC; otherwise, the Cisco IPICS system may not be able to accurately detect your voice and properly register transmit and/or receive traffic.
- If the Cisco IPICS system cannot detect your voice when you transmit, the system may squelch the transmission; in this situation, another Cisco IPICS user may start speaking over your transmission because your voice cannot be heard and the PMC receive indicator may not display any indication of the transmission.



**Note**

Be aware that if the microphone on the PMC client machine is busy or if it cannot be opened by the PMC for other reasons, you will be able to listen to active conversations but you will not be able to talk.

For detailed information about the audio setting configuration and sound recording capability, see the [“Configuring the Audio Settings” section on page 2-7](#), the [“Using a USB DSP Headset with the PMC” section on page 2-8](#) and [“Using the Microphone with the PMC” section on page 2-9](#).

## Using Cisco Security Agent with the PMC

When you have Cisco Security Agent (CSA) installed on the PMC client machine, be aware that you may be prompted with CSA access permission dialog boxes for various operations that you are trying to perform.

**Note**

Whenever CSA prompts you for permission, while you are performing any operation on the PMC, be sure to always click **Yes** to grant permission and continue with that operation.

CSA may prompt you for permission in the following instances:

- If you are prompted with a CSA access permission dialog box during the PMC installation process, be sure to click **Yes** to grant permission to the PMC installation.
- If you are prompted with a CSA access permission dialog box when you launch a new version of the PMC or after a system reboot, make sure that you click **Yes** to grant permission to allow the PMC to monitor the media device (microphone).

**Note**

If you allow CSA to time-out based on its default value of No after you launch the PMC, the PMC will be able to receive traffic but it will not be able to send traffic; that is, you will still be able to listen to any active conversations but you will not be able to transmit.

- If you are prompted with an access permission dialog box when you activate a channel on the PMC, be sure to click **Yes** to grant permission.
- If you are prompted with an access permission dialog box when you uninstall the PMC, click **Yes** to grant permission.
- If the “Don’t ask me again” check box displays as an option, you may check it to instruct CSA not to prompt you again in the future.

For information about using CSA, refer to the Cisco Security Agent documentation at the following URL:

[http://www.cisco.com/en/US/products/sw/secursw/ps5057/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/sw/secursw/ps5057/tsd_products_support_series_home.html)

## PMC Coexistence with Other Voice Applications

The capability for the PMC application to coexist with other voice applications depends on the operating system that you use.

For example, Windows XP allows multiple applications to run concurrently and open and use the microphone at the same time. Some operating systems, however, do not provide support for this same capability; that is, only one voice application, such as the PMC or another voice application, may be active at the same time on a PMC client machine.

For instance, if you try to open the PMC application while you are running Microsoft NetMeeting conferencing software, the PMC displays an error because it cannot access the media device. In this case, you must first close the NetMeeting application and then launch the PMC. You can then restart NetMeeting.

## Troubleshooting One-Way Audio

You may encounter one-way audio issues (such as, you may be able to send audio but you may not be able to hear audio) under various situations when you use the PMC. The following topics provide information about how to resolve these one-way audio issues:

- [Using CLI Commands to Resolve Audio and Headset Issues, page 8-11](#)
- [Resolving IP Address Changes, page 8-13](#)

**Note**

Be aware that multicast issues may also contribute to problems with one-way audio. For more information, see the [“Troubleshooting Multicast Communications Issues”](#) section on page 8-21.

**Tip**

Check the network connectivity for your PMC client machine to make sure that you have a valid IP address and that you can connect to the network before you start using the PMC. If you use SIP-based remote connections, make sure that the PMC can establish connectivity to the RMS. (The PMC connects to the RMS by using the IP address of the Loopback0 interface that is assigned to the RMS.) For more information, see the [“Resolving IP Address Changes”](#) section on page 8-13.

## Using CLI Commands to Resolve Audio and Headset Issues

You can verify and isolate audio issues that you may experience by using CLI command options on the PMC. This section describes the CLI commands that you can use to help resolve audio issues.

### Using CLI Commands to Resolve Headset Issues

If you encounter a situation where you cannot hear audio on the PMC, the problem may be due to the headset that you are using. You can verify and isolate one-way audio problems by using CLI command options on the PMC.

Be aware of the following caveats when you use CLI commands:

- Make sure that the PMC to which you are issuing the command is running; the command has no effect if the PMC is not running.
- Issue the command from the Windows command line on the PMC client machine; the command affects only that PMC.

To enter a CLI command on the PMC, follow this procedure:

#### Procedure

- 
- Step 1** On the PMC that has encountered the problem, open the Windows command line by following these steps:
- a. Choose **Start > Run**.

The Windows dialog box displays.

- b. Enter **cmd** in the Open field.
- c. Press **Enter** or click **OK**.

The Windows command line window displays.

- Step 2** In the Windows command line window, change the current directory to the folder in which the PMC is installed.

The following example shows the directory structure in which the PMC folder may appear:

**C:\Program Files\Cisco Systems\Cisco IPICS\PMC**

- Step 3** Enter the desired CLI command and press **Enter**.

For a description of each CLI command, refer to Chapter 2, “Command Line Interface Commands” in the *Cisco IPICS Command Line Interface*.

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### Using the CLI Play Command to Resolve One-Way Audio Issues

To verify that the one-way audio problem is not a PMC application issue, you can enter the CLI **play** command from the Windows command line of the PMC.

The play command outputs a wave audio file to the specified PTT channel. This command latches the PMC PTT button, plays the designated wave file, and then unlatches the PTT button. The syntax of the play command appears below:

**PMC.EXE -Play *file* [-line #]**

- The *file* argument specifies the path and file name of the wave file to play.
- The **-line #** option, where # is a number between 1 and 18, specifies the PTT channel line to which this command applies. (If you omit this option, the command applies to channel 1.)

The following command shows an example of the play command:

**PMC.EXE -Play C:\aud1.wav -line 2**

In this example, this command plays the aud1.wav file to PTT channel 2.

When you successfully execute this command, you can hear audio from one PMC to another PMC and eliminate the PMC as the source of the one-way audio problem. When this situation occurs, the problem can be isolated to a faulty headset. In that case, replace the headset and try again.

**Note**

For detailed information about using PMC CLI command options, refer to the [\*Cisco IPICS PMC Command Line Interface, Release 2.1\(1\)\*](#).

## Resolving IP Address Changes

The following section provides information about resolving IP address changes on the PMC client machine; it includes the following topics:

- [Changing IP Addresses on the PMC Client Machine, page 8-13](#)
- [IP Address Change Notifications, page 8-13](#)

### Changing IP Addresses on the PMC Client Machine

If you change the IP address on your PMC client machine (for example, when switching from a wired to a wireless network), and the PMC is open, you may encounter one-way audio on the PMC. To resolve this issue, close and then restart the PMC.

If you change the IP address on your PMC client machine when the PMC is not open, the PMC should not be affected by the change. You should always establish network connectivity to make sure that you have a valid IP address before you open the PMC.

### IP Address Change Notifications

Under normal conditions, the PMC chooses the first network connection that allows it to communicate with the server. If that network connection becomes unusable, the PMC chooses another network connection for its communications.

Cisco IPICS provides notification to the PMC user when the PMC changes the source IP address that it uses for communications with the server. However, on PMC client machines that include more than one network connection, the PMC may not provide this notification. In these instances, there is no impact to functionality; Cisco IPICS continues to operate normally when notification of the IP address change is not sent to the user.

## Troubleshooting Voice Quality Issues

You may encounter voice quality issues, which can arise due to several factors, such as noise and voice distortion.

For detailed information about voice quality problems and symptoms, refer to the [Recognizing and Categorizing Symptoms of Voice Quality Problems](#) documentation, which can be found at the following URL:

[http://www.cisco.com/en/US/tech/tk652/tk698/technologies\\_white\\_paper09186a00801545e4.shtml](http://www.cisco.com/en/US/tech/tk652/tk698/technologies_white_paper09186a00801545e4.shtml).

This document categorizes and defines voice quality problem symptoms and may aid your troubleshooting efforts by helping you to identify specific problems through the use of sample sound recordings.

This document also includes a link to the [TAC Case Collection Tool](#), which provides solutions by interactively identifying and troubleshooting common technology or product problems.

You can access the TAC Case Collection Tool at the following URL:

[http://www.cisco.com/en/US/customer/support/tsd\\_tac\\_case\\_collection.html](http://www.cisco.com/en/US/customer/support/tsd_tac_case_collection.html)

## Resolving Unknown Publisher Errors with Windows XP SP2

As part of the browsing security enhancements that were implemented in Microsoft Windows XP Service Pack 2 (SP2), you may encounter an “Unknown Publisher” error when you use the Internet Explorer (IE) browser to download the PMC from the Cisco IPICS server.

This problem may occur when you try to run an executable file or an add-in program that contains an invalid signature and that you downloaded by using the IE version that is installed with Windows XP SP2.

To resolve this issue, Microsoft recommends that you unblock the publisher and then try to save or run the file that you downloaded. Alternatively, you can modify the security settings on your PMC client machine, although this workaround is not recommended.

For detailed information about how to resolve this issue, refer to the Microsoft support site at <http://support.microsoft.com/> and search for Article ID 843022.

## Resolving Cisco IPICS Server Administration Console Access Issues with Internet Explorer

For enhanced security on your PMC client machine, Cisco recommends that you review and follow the recommendations that are included in the Windows XP Security Guide. To find this document, refer to the Microsoft support site at <http://support.microsoft.com/> and search for “Windows XP Security Guide.”

When you follow the recommendations that are included in the Windows XP Security Guide and deny all add-ons, except those that are specifically allowed in the add-on list, you may encounter a problem where you cannot access the Cisco IPICS server Administration Console. This issue occurs when you use Internet Explorer from a PC that runs Microsoft Windows XP SP2 and have not enabled the JavaScript GUID in the add-on list.

To resolve this issue and ensure proper operation from Internet Explorer, you must explicitly enable the following JavaScript GUID add-on on your PMC client machine:

- GUID: {F414C260-6AC0-11CF-B6D1-00AA00BBBB58} - JavaScript

For detailed information about how to enable this add-on, refer to the Microsoft support site at <http://support.microsoft.com/> and search for Article ID 555235.

## Troubleshooting PMC Connectivity Issues

The following topics provide information about troubleshooting PMC connectivity issues:

- [Troubleshooting VPN Connectivity, page 8-16](#)
- [Using the PMC with the Windows XP Firewall, page 8-18](#)
- [Resolving Issues with the Microsoft QoS Packet Scheduler, page 8-20](#)
- [Troubleshooting Multicast Communications Issues, page 8-21](#)
- [Troubleshooting Winsock Corruption Issues, page 8-22](#)
- [Troubleshooting Offline Mode Issues, page 8-22](#)
- [Troubleshooting PMC Connectivity Issues with the RMS, page 8-23](#)
- [Troubleshooting PMC Connectivity Issues with a High Latency, Low Bandwidth Link, page 8-24](#)

## Troubleshooting VPN Connectivity

If the Cisco Systems VPN Client is installed on your PMC client machine, you must ensure that the settings for the integrated stateful firewall feature are correctly set to enable PMC remote connectivity. This section includes the following topics to describe the Cisco Systems VPN Client and how to ensure it is correctly set on the PMC client machine:

- [About the VPN Client Stateful Firewall, page 8-16](#)
- [Enabling and Disabling the Stateful Firewall on the PMC Client Machine, page 8-17](#)

Be aware of the following caveats that apply to specific versions of the Cisco Systems VPN Client.

### Cisco Systems VPN Client Version Interoperability Caveats

When you use the Cisco Systems VPN Client version 3.6.3(x) with the PMC, the PMC may not be able to detect the IP address and route change after you establish or disconnect a VPN tunnel. This problem occurs when the Cisco Systems VPN Client does not communicate the IP address and route change information to the operating system. When this problem occurs, the channels on the PMC may not be able to receive audio.

To resolve this problem, access the **Settings > Advanced** menu in the PMC application after you have established or disconnected the VPN tunnel on your PMC client machine. When you access this menu, the PMC probes the Cisco Systems VPN Client to determine its activity and tunnel status and, from this menu, it can also detect an IP address change. For more information about the Express menu, see the [“Configuring the Channels and Advanced Settings” section on page 5-9](#).

When you use the Cisco VPN Client version 4.0x, the SIP-based remote connection may not become activated. In this situation, you may need to deactivate and then reactivate the channel after you establish the VPN tunnel. To deactivate the channel, click the **Activate** button. Click the **Activate** button again to reactivate the channel.

### About the VPN Client Stateful Firewall

The VPN Client integrated stateful firewall provides protection when split tunneling is in effect by safeguarding from Internet attacks while the VPN client is connected to a VPN concentrator through an IPSec tunnel.



When enabled, this “Stateful Firewall (Always On)” feature enforces more robust security by disallowing inbound sessions from all networks, regardless of whether a VPN connection is being used. This firewall is active for both encrypted and unencrypted traffic, except when you use the following protocols:

- Dynamic Host Configuration Protocol (DHCP)—The stateful firewall allows inbound traffic because requests to the DHCP server are sent out one port and responses are received through a different port.
- Encapsulating Security Payload (ESP)—The stateful firewall permits this traffic from the secure gateway because ESP rules are packet filters and not based on sessions.

For more information about exceptions, refer to the release notes for the VPN Client documentation at the following URL:

[http://www.cisco.com/en/US/products/sw/secursw/ps2308/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/sw/secursw/ps2308/tsd_products_support_series_home.html)

## Enabling and Disabling the Stateful Firewall on the PMC Client Machine

To ensure PMC connectivity, check the VPN Client Options menu to verify that the “Stateful Firewall (Always On)” feature is disabled. (If a check mark does not appear next to this option, then it is disabled.) The “Stateful Firewall (Always On)” option enables and disables the integrated stateful firewall.



### Note

Be sure that the “Stateful Firewall (Always On)” option is not enabled on your PMC client machine. If this option is enabled, you must disable it; otherwise, SIP and multicast connections may not work correctly.



### Tip

The “Stateful Firewall (Always on)” feature affects only Internet traffic; when this feature is enabled, it disallows inbound sessions from all networks, regardless of whether a VPN connection is being used. This is true for the VPN Client on any operating system.

To enable or disable the stateful firewall, and manage this setting on your Cisco Systems VPN Client PMC machine, perform the following procedure:

### Procedure

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- Step 1** Double-click the VPN Client icon to launch the application.
- Step 2** From the VPN Client main dialog box, click the Options drop-down menu button and scroll down to the “Stateful Firewall (Always On)” option. Alternatively, you can right-click the **lock icon** in the system tray and choose **Stateful Firewall**.




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**Note** When the stateful firewall is enabled, a check mark displays next to this option. The stateful firewall feature is disabled by default.

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- a. If a check mark appears next to this option, the option is enabled. Click “**Stateful Firewall (Always On)**” to remove the check mark and disable the internal stateful firewall.
- b. If a check mark does not appear next to this option, the option is already disabled. You do not need to take any action.

To view the status of the stateful firewall, right-click the **lock icon** in the system tray during a VPN connection.

- Step 3** Close the VPN client.
- 

For additional information about the Cisco Systems VPN Client, refer to the VPN Client documentation for your specific version at the following URL:

[http://www.cisco.com/en/US/products/sw/secursw/ps2308/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/sw/secursw/ps2308/tsd_products_support_series_home.html)

## Using the PMC with the Windows XP Firewall

The Microsoft Windows XP operating system includes an integrated firewall to provide additional security. Windows XP and Windows XP Service Pack 1 (SP1) include the Internet Connection Firewall (ICF) while Windows XP SP2 includes the Windows Firewall, as a replacement to the ICF.

For the PMC application to work properly with Windows XP, you may need to modify your firewall settings to ensure that the PMC can send and receive the required protocols.

To modify your firewall settings, perform the following procedure:

### Procedure

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- Step 1** On your Windows XP PMC client machine, navigate to **Start > Control Panel > Network and Internet Connections**.
- The Network and Internet Connections window displays.
- Step 2** Click the **Change Windows Firewall settings** link.
- The Windows Firewall window displays.
- Step 3** Click the **Exceptions** tab.
- A list of programs and services displays.
- Step 4** If you have already installed the PMC, check the **Cisco IPICS PMC** check box to add this program to the list of exceptions in the Windows Firewall; then, proceed to [Step 6](#).
- Step 5** If you have not yet installed the PMC, install and then launch the PMC.
- For information about installing and launching the PMC, see the “[Installing the PMC Application](#)” section on page 2-2 and the “[Launching the PMC Application](#)” section on page 2-13.
- After you launch the PMC, a Windows Security Alert displays to inform you that Windows XP has blocked the PMC.
  - Click **Unblock** to add this program to the list of exceptions in the Windows Firewall.
- Step 6** Click **OK**.
- Windows XP now allows the PMC to function properly.
- 

Contact your system administrator if you need assistance with your specific client machine configuration.

For more information about the Windows XP firewall, refer to the Microsoft support site at <http://support.microsoft.com/>

## Resolving Issues with the Microsoft QoS Packet Scheduler

If you encounter a situation where the PMC client cannot connect to the Cisco IPICS server, and you do not have a firewall enabled but you can successfully ping the server, the QoS Packet Scheduler may have become corrupted.

To resolve this issue, perform the following steps:

1. Uninstall the PMC application on your PMC client machine. For information about how to uninstall the PMC client, see the [“Uninstalling the PMC Application” section on page 2-27](#).
2. Uninstall the QoS Packet Scheduler. For additional details and information about how to uninstall the QoS Packet Scheduler, go to <http://www.microsoft.com> and search for “QoS Packet Scheduler.”
3. Reinstall the PMC application on your PMC client machine. For information about how to install the PMC application, see the [“Installing the PMC Application” section on page 2-2](#).



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**Note**

The PMC installation process checks to make sure that the QoS Packet Scheduler is installed on your PMC client machine. If the PMC installation process detects that the QoS Packet Scheduler is not installed, it automatically installs the QoS Packet Scheduler on your PMC client machine. Be aware that your user ID must have local administrative rights for this installation to succeed.

---

4. Check the Windows XP firewall settings and reconfigure, as necessary, to make sure that the PMC displays in the list of exceptions. For detailed information about how to modify the Windows XP firewall setting for use with the PMC, see the [“Using the PMC with the Windows XP Firewall” section on page 8-18](#).

For more information about the QoS Packet Scheduler, see the [“Voice Quality Tips” section on page 2-11](#).

## Troubleshooting Multicast Communications Issues

Certain PMC client machines that are running the Windows XP operating system may not be able to send multicast communications because of an issue with the operating system; in these situations, PMC multicast users may experience one-way audio where they can hear, but they may not be heard by, other Cisco IPICS users.



### Tip

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To ensure identification of this specific problem, please check to make sure that the microphone mute options on the headset and in the Windows operating system are not enabled. For more information about using the microphone with the PMC, see the [“Using the Microphone with the PMC” section on page 2-9](#).

---

This problem with multicast communications may be caused by the network component of the operating system being unable to transmit multicast traffic. Cisco IPICS PMC users who encounter this problem should connect to Cisco IPICS over a unicast connection by choosing the **remote** location from the location selection dialog box. (By choosing the remote location, Cisco IPICS uses SIP-based connectivity for all channels on the PMC.)

To positively identify this problem, use a network packet sniffer as described below:

1. Run the sniffer on the affected PMC client machine and filter for outgoing multicast UDP packets.
2. Then, launch the PMC application and click the **PTT** channel button on one of the channels and speak into the microphone or headset. (The channel highlights and changes color to indicate that you are transmitting traffic.)
3. Observe the sniffer; you will see that no multicast UDP packets are sent from the PMC client machine.

To fully resolve this problem, you must perform a fresh installation of the Windows XP operating system on the PMC client machine.

## Troubleshooting Winsock Corruption Issues

If you encounter connectivity problems, such as the inability to send and/or receive IP traffic or if you receive an error when you try to release and renew the IP address on your PMC client machine, you may be experiencing a problem with damaged or corrupted Windows Winsock registry keys.

When the Winsock registry is damaged or corrupted, the PMC client machine may unexpectedly lock up and not accept any additional input.

To fully resolve this problem, you must fix the malfunctioning network components in your Windows installation. To fix the malfunctioning network components, perform one of the following tasks:

- Remove and reinstall the Windows TCP/IP stack
- Issue a command to fix the Winsock corruption (this command is applicable to Windows XP systems only)
- Perform a fresh installation of the Windows operating system

For additional information, access the Microsoft support site at <http://support.microsoft.com> and search for the Microsoft knowledge base article 811259 entitled “How to determine and recover from Winsock2 corruption.” This bulletin contains information about the symptoms and causes of Winsock corruption issues and the procedures that you can follow to resolve these problems.

To help identify problems with the Winsock registry keys and avoid application issues, Cisco recommends that you validate that your Windows Winsock library is not corrupted before you install the PMC application on your client machine.

## Troubleshooting Offline Mode Issues

Cisco IPICS allows the PMC to operate in offline mode when the connection to the server has been interrupted so that you can continue to communicate during periods of server downtime.

There are several situations that may cause the PMC to enter offline mode, such as, the inability of the PMC to communicate with the server, networking issues that prevent routing from the PMC client machine to the server, and IE browser settings that cause your PC to work in offline mode.

For detailed information about the situations that apply to offline mode based on interactions between the PMC and the server, see the [“PMC Offline Mode Caveats” section on page 4-7](#).

If you encounter a situation where Cisco IPICS returns a message that states that the PMC is in offline mode while the connection to the server is online, check to make sure that your IE browser is not operating in offline mode. To check this setting, choose **File** from the IE browser window. Scroll down to the Work Offline option and make sure that a check mark does not appear next to this option. (If a check mark does not appear next to this option, then it is disabled.)

If a check mark appears next to this option, click **Work Offline** to remove the check mark and disable offline mode.

**Note**

Be sure that the “Work Offline” option in your IE browser settings is not enabled on your PMC client machine. If this option is enabled, you must disable it; otherwise, you may not be able to connect to the server.

## Troubleshooting PMC Connectivity Issues with the RMS

To connect the PMC via a SIP-based remote connection, make sure that the PMC can establish connectivity to the RMS. (The PMC connects to the RMS by using the IP address of the Loopback0 interface that is assigned to the RMS and configured in the Cisco IPICS server.)

To determine the IP address of the RMS, access the **Settings > Channels** menu in the PMC application. Click a remote connection channel to highlight it; then, scroll through the Channel Properties pane to the SIP Proxy field to find the IP address of the RMS for the associated channel. (If you cannot determine the IP address of the RMS, contact your System Administrator for assistance.)

From the PMC client machine command line interface, enter the following command to ping this IP address to verify connectivity:

```
C:\>ping <SIP Proxy IP address>
```

where *SIP Proxy IP address* represents the RMS component.

**Note**

The PMC must be able to establish connectivity to the RMS to enable SIP-based remote connections. Make sure that you can successfully ping this IP address to ensure PMC connectivity to the RMS. If the PMC cannot connect to the RMS, you may experience channel activation issues (such as fast busy) when you attempt to use a SIP-based remote connection.

## Troubleshooting PMC Connectivity Issues with a High Latency, Low Bandwidth Link

When you first log in to a PMC that is connected via a high latency and/or low bandwidth link, such as when you use a satellite connection, an error message displays to inform you that the channels are being disabled. This error occurs because of the time delay to connect over this type of link. To recover from this error, click **OK**.

If the Cisco IPICS server times out while it is waiting for a response from one or more resources, the server does not have complete information to send to the PMC. In this case (after about one minute), the server sends an incomplete list of channels to the PMC while it waits for a response.

The server marks each channel that does not respond within the timeout interval as “unavailable” until the operation completes. When this situation occurs, the PMC displays a message that states that the “RMS resources may not be available.”

You do not need to take any action to resolve this issue. After the server completes its tasks, the channels display on the PMC.

**Note**

Be aware that the amount of time that it takes for the server to complete its tasks will vary depending on the amount of latency in the network.

For information about configuring the PMC for use with a high latency and/or low bandwidth link, see the [“Configuring the Channels Menu Options” section on page 5-9](#).



## Resolving Name Resolution Failures

Cisco IPICS requires IP name resolution. An incorrect Domain Name Service (DNS) IP configuration could result in a service outage.

To resolve name resolution failures, consult with your system administrator to confirm IP name resolution within the entire network, which includes local device IP configurations, network-based name resolution systems (such as DNS), and DHCP systems.

## Identifying Channel Activation Issues

When you click the **Activate** button on the PMC, the system enters the activating state; that is, the Activate button highlights and the system attempts to connect to the Cisco IPICS server.

- When you click the Activate button immediately after a SIP-based (unicast) channel becomes available on the PMC, you may hear a busy tone if the RMS has not completely configured the line. If you encounter this situation, click the **Activate** button to deactivate the channel; then, wait a few seconds and click **Activate** again to reactivate the channel.

After the connection has been established, the remaining PMC buttons, including the PTT channel button, highlight to indicate that they are in an active state.

- If your ability to transmit on a channel has been disabled by the server, and/or if the channel has been configured by the server as a listen-only channel, the channel will appear dimmed. If the channel has been disabled by the server, you will not be able to activate the channel, as none of the buttons will appear.

If the remaining PMC buttons do not become active, and if you are using a SIP-based connection, one of the following conditions may be occurring:

- Network connectivity issues that prevent connection to the RMS.
- The RMS may be in an offline or invalid state.
- The RMS may be misconfigured in the server.
- The dial peers may not have been configured or the dial peers and/or the voice ports may be misconfigured in the RMS.

- The RMS may not have yet created the dial peers because of a delay between the server configuration and RMS dial peer creation. In this case, you should wait a couple of minutes and then restart the PMC to try again.

**Note**

When SIP-based remote connections fail, the PMC displays a warning indicator in the form of a yellow triangle next to the channel. This indicator signifies that a problem exists with the remote end (PMC, RMS, or server) and that it may not be able to send or receive traffic. This situation may be caused by a network interruption or reset/restart activity at the remote end. During this period of interruption, the PMC continues to attempt to connect to the remote end. After operations return to normal, the PMC removes the warning indicator from view.

If there is no traffic activity after a 30 minute interval, channels that are activated via a SIP-based remote connection may be deactivated by the system.

- The PMC will automatically reactivate the connection after 30 seconds. Alternatively, you can reactivate the channel by clicking the **Activate** button on the PMC.

## Resolving Codec Mismatch Issues

When the protocol type or codec type is misconfigured in the RMS LMR gateway, the PMC has the ability to detect this codec type mismatch (such as G.729 versus G.711) and thereby, preserve system resources and PMC functionality.

If the misconfiguration includes a specific codec type that Cisco IPICS supports (that is, G.729 or G.711), the PMC adapts the codec decoding to enable handling of the different version of that specific codec type. For example, the PMC can adapt to different versions of G.711, such as G.711 ulaw and G.711 alaw, and decode either version automatically to maintain functionality.

If the codec type mismatch is caused by the configuration of an incorrect or unsupported codec type, the PMC will drop the incorrect or unsupported encoded samples because it cannot decode them. In this case, the PMC user will not hear any audio.

For more information about the codecs that Cisco IPICS supports, see the [“Codec Support” section on page 3-24](#).

## Support for Right-to-Left and Double-Byte Languages

**Note**

Although this version of Cisco IPICS does not support localization, it does provide support for the PMC to display channel/VTG names that are configured in the server in certain right-to-left (RTL) and double-byte (character-based) languages. This support allows for the input of Arabic and Hebrew characters (RTL languages) and Chinese and Japanese characters (double-byte languages) for names and descriptions in the Cisco IPICS server.

To use a right-to-left language or a double-byte language in Windows XP, you need to configure the operating system to enable support for the specific language that you use.

**Note**

If you try to use the Arabic or Hebrew language without enabling support for RTL, your text will display in reverse.

**Procedure**

To enable RTL support for the Arabic and Hebrew languages for use with Cisco IPICS, and to enable support for double-byte languages, perform the following procedure:

**Procedure:**

**Step 1** Navigate to **Start > Control Panel > Regional and Language Options**.

The Regional and Language Options dialog box displays. In this dialog box, you can specify options for regional and language settings on your system.

**Step 2** Click the **Languages** tab.

- To add support for supplemental languages, check the **Install files for complex script and right-to-left languages (including Thai)** check box in the Supplemental Language Support area.
- To add support for Chinese and Japanese languages, check the **Install Files for East Asian languages** check box.

A pop-up message displays to inform you that the installation of supplemental language support requires a defined amount of available disk space.

- Step 3** Click **OK** to accept.
- Step 4** From the Regional and Language Options dialog box, click **Apply**; then, click **OK**.
- Step 5** If you are prompted, restart your PMC client machine for your changes to become effective.




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**Note** After your PMC client machine restarts, your operating system will be enabled for the languages that you chose.

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- Step 6** After the language files have been installed, navigate to Regional and Language Options, as described above, and click the **Details** button in the Text Services and Input Languages pane.
  - Step 7** From the Installed Services pane, click **Add**.  
The Add Input Language dialog box displays.
  - Step 8** From the Input Language drop-down list box, click to select and highlight the input language for one of the supported languages; then, click **OK**.
  - Step 9** Check the **Keyboard Layout / IME** check box; from the drop-down list box, choose the keyboard layout to use.
  - Step 10** Click **OK**.  
The Text Services and Input Languages dialog box displays your selection in the Installed Services pane.
  - Step 11** Click **Apply**; then, click **OK**.
  - Step 12** Repeat this procedure for each supported language that you want to add.
- 

## PMC Application Caveats

The following caveats pertain to the PMC application:

- Only one instance of the PMC application can be open and each PMC supports only one user ID login on a given PC at one time.
- A PMC end-user can log in to an unlimited number of different PMC applications at the same time.
- Any number of valid Cisco IPICS users can use the same PMC application, but not concurrently, based on PMC licensing requirements.
- The PMC application can log in to the server that has been configured as the default server and from which the PMC installation file has been downloaded. If the primary server is not accessible, and if there are alternate servers to choose from, you can log in to a different server. For more information about connecting to alternate servers, see the [“Support for Cisco IPICS Recovery” section on page 6-1](#).
- See the [“PMC Usage Guidelines” section on page 4-2](#) for information about using the PMC.
- See the [“PMC Offline Mode Caveats” section on page 4-7](#) for information about using the PMC in offline mode.
- See the [“Skin Caveats” section on page 5-5](#) for information about PMC skin caveats.
- If you use a docking station with your PMC client machine, make sure that you close the PMC application before you undock your PC; otherwise, your PC may become unresponsive and require you to reboot.

## Analyzing PMC Error Conditions

This section includes information about identifying and resolving errors that you may encounter when you use the PMC.

In some situations, the PMC may display an error message. In other situations, you may experience certain issues, such as audio quality issues, where a message does not display.

[Table 8-1](#) describes some of these error conditions and audio quality issues and how to resolve them.

**Table 8-1**      *PMC Error Conditions*

| Problem                                                                                                                                                                   | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| You cannot connect to the server. Or, you may see error messages that state you cannot connect to the server but you can connect by using Internet Explorer.              | <p>Invalid entries in the <code>pmc.ini</code> file may be the cause of this problem. To check this file, perform the following steps:</p> <ol style="list-style-type: none"> <li>1. Navigate to <b>C:\Program Files\Cisco Systems\Cisco IPICS\PMC</b>.</li> <li>2. Search for the <b>pmc.ini</b> file.</li> <li>3. Right-click <b>pmc.ini</b> and click <b>Open With</b>.</li> <li>4. Click <b>Notepad</b>; then, click <b>OK</b>.</li> <li>5. Delete all entries in this file except the following fields: <code>server_host</code>, <code>server_port</code>, and <code>server_port_ssl</code>.</li> <li>6. Validate that the configured values in these fields are correct.</li> </ol> <p><b>Note</b>    Contact your system administrator if you are not sure of these values or if these values are correct and you still cannot connect.</p> |
| You can hear other users but they cannot hear you.                                                                                                                        | <p>Check your audio settings to make sure that your microphone is not set to mute. See the <a href="#">“Configuring the Audio Settings” section on page 2-7</a> for more information about audio settings.</p> <p><b>Note</b>    If you are using a hardware DSP headphone, such as the Plantronics DSP, check to make sure that the external microphone mute button is not switched to the “on” position.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| When you attempt to download the PMC application from the server, you may receive an error message to inform you that the PMC is not available for download at this time. | This problem may occur if the <code>pmcsetup.exe</code> file was erroneously modified, moved, renamed, or deleted from the server. Contact your system administrator for assistance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 8-1**      **PMC Error Conditions (continued)**

| Problem                                                                                                         | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When you talk, other users tell you that your voice sounds choppy and breaks up at times during a conversation. | <p>If VAD is enabled, disable the setting in the Channels menu. See the <a href="#">“Configuring the Channels and Advanced Settings” section on page 5-9</a> for more information about VAD.</p> <p>If voice quality still sounds choppy, check the CPU activity on your client machine. If your CPU is overburdened by other programs that are running at the same time, there may insufficient CPU cycles for the PMC to run properly. You can check the CPU usage by opening Windows Task Manager and clicking on the <b>Performance</b> tab.</p> <p>If your CPU utilization appears high, check the applications that are running by clicking the <b>Applications</b> tab and then close any programs that do not need to be open.</p> |
| When you talk, other users tell you that your voice sounds low.                                                 | <p>Check the placement of your microphone so that it is positioned between 2 and 6 inches from your mouth. If necessary, reposition the microphone for optimum use.</p> <p>If your microphone gain is set too low, VAD may be interfering with and disabling output; this activity can result in choppy voice quality.</p> <p>Check your audio settings to make sure that the volume is not set too low. If the volume is set low, increase the input gain on your microphone by sliding the bar up on the volume controls to increase the volume.</p>                                                                                                                                                                                     |
| When you talk, other users tell you that they hear a persistent or intermittent noise, such as a hum.           | <p>The existence of a persistent or intermittent noise, such as a hum, when you talk may be due to defective headset hardware. In this situation, Cisco recommends that you isolate the source of the audio quality issue by replacing the defective headset with a new, high-quality headset.</p> <p>For more information about voice quality, see the <a href="#">“Voice Quality Tips” section on page 2-11</a>.</p>                                                                                                                                                                                                                                                                                                                     |

**Table 8-1**      *PMC Error Conditions (continued)*

| Problem                                                                                                                                                                                        | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When you attempt to log in to the PMC, you see an error message that states “invalid user or password.”                                                                                        | <p>This error may display because the password that was entered is incorrect for the specified user name or because the user name does not exist on the Cisco IPICS server.</p> <p>To remedy this situation, log in to the PMC by using a correct user name and password combination. If this action does not resolve the problem, contact your system administrator to request that a new user account be added to the server for the specified user.</p>                                 |
| When you start the PMC after a new installation, the PMC displays an error message to alert you that the PMC cannot register with the Cisco IPICS server and to check your network connection. | <p>Upon initial connection to the server, the PMC must be able to register with the Cisco IPICS server to obtain its unique PMC ID.</p> <p>This error message may display when the PMC tries to connect to a server that is offline and has not yet assigned the PMC ID. When you see this error dialog box, click <b>OK</b> to exit; then, restart the PMC to try again.</p> <p>If the PMC continues to display this error message, contact your system administrator for assistance.</p> |



**Table 8-1**      *PMC Error Conditions (continued)*

| Problem                                                                                                   | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The PMC displays a security alert dialog box that prompts you to approve the server certificate.          | <p>The PMC has been designed to automatically approve the Cisco IPICS server certificate for secure communications; however, this functionality may not work under certain circumstances. When this functionality does not work properly, the PMC displays a security alert dialog box to inform you that the page requires a secure connection which includes server authentication. To proceed, you must approve the server certificate.</p> <p>On affected PMC client machines, this dialog box appears each time that you run the PMC, once per PMC session (usually during login). When you see this dialog box, you must click <b>Yes</b> to run the PMC. If you click No, the PMC will exit.</p> |
| When you try to launch the PMC, an error message displays because the PMC cannot access the media device. | <p>The PMC application may coexist with other voice applications depending on the operating system that you use. Windows XP allows multiple applications to run concurrently and open and use the microphone at the same time. Other operating systems, however, do not provide support for this same capability.</p> <p>You may encounter this error when you try to open the PMC application while you are running another voice application, such as Microsoft NetMeeting conferencing software, on your PMC client machine. To resolve this issue, close NetMeeting and then launch the PMC. You can then restart NetMeeting.</p>                                                                   |

**Related Topics**

- [Configuring the Audio Settings, page 2-7](#)
- [Skin Caveats, page 5-5](#)
- [Configuring the Channels and Advanced Settings, page 5-9](#)
- [Using the Optional Settings Menu, page 5-16](#)

**Where to Find More Information**

- *Cisco IPICS Server Administration Guide, Release 2.1(1)*
- *Cisco IPICS PMC Command Line Interface, Release 2.1(1)*