C H A P T E R 4

Using the PMC Application

This chapter provides information about using the PMC, including logging in and logging out of the application, channel and user interactions, associated caveats, accessing menus, and using end-user features.

This chapter includes the following sections:

- Logging In to the PMC Application, page 4-1
- Using the PMC Application, page 4-12
- Logging Out of the PMC Application, page 4-39

Logging In to the PMC Application

As a PMC user, you initially log in to the PMC application by logging through the application in to the Cisco IPICS server. (The first login requires availability of the Cisco IPICS server.) The server validates the user login credentials so that subsequent PMC logins can be performed without the server.

See the "Launching the PMC Application" section on page 2-14 for more information about launching and logging in to the PMC.

This section provides information about logging in to the PMC and includes the following topics:

- PMC Usage Guidelines, page 4-2
- License Information, page 4-6
- Server-PMC Login Sequence Interaction, page 4-6

PMC Usage Guidelines

> **Note** Cisco IPICS only supports the use of PMC release 2.0(1) with a Cisco IPICS server that also runs release 2.0(1).

This section includes guidelines for using the PMC; it includes the following topics:

Tips for Using the PMC

The following tips will help you to use the Cisco IPICS PMC most effectively:

- Use a high-quality microphone and check the placement and settings of your audio devices before you begin to use the PMC. For more information about optimizing your audio, see the "Optimizing Your Audio on the PMC" section on page 2-7.

- Your ability to use certain PMC features, such as latch, multiselect, alert tones, DTMF, and All Talk, depend on the configuration in the server. For more information, see the "End-user Features and Interactions" section on page 4-20.

- You can use only those voice channels that have been assigned to you and which are visible on your PMC.

- When a channel is activated, the PTT button highlights and changes color. (For more information, see the "Channels/States" section on page 4-18, "User Channel Activity Interaction" section on page 4-37, and the "Configurable Server Attributes" section on page 3-15.

- To talk on a channel, click and hold the push-to-talk (PTT) button before you speak.

- Talk in short bursts and monitor the receive indicator so that you do not talk over other Cisco IPICS users.

Tip Be sure to monitor the receive indicator on the PTT channel button for PMC traffic so that you do not talk over other Cisco IPICS users. When the receive indicator shows activity, you are receiving traffic. If you talk while you are receiving traffic, you are likely not being heard.

Connectivity Tips for Using the PMC

The following tips will help to ensure successful connection of the Cisco IPICS PMC:

- Before you launch the PMC, establish network connectivity to make sure that you have a valid IP address.

- For connections that use the remote location, make sure that the PMC can establish connectivity to the Router Media Service (RMS). For more information, see the "Troubleshooting PMC Connectivity Issues with the RMS" section on page 8-21.

- If the Cisco VPN Client is installed on your PMC client machine, disable the "Stateful Firewall (Always On)" option; otherwise SIP and multicast connections may not work correctly. For more information, see the "Troubleshooting VPN Connectivity" section on page 8-15.

- For the PMC to work properly with Windows XP, you may need to modify the firewall settings so the PMC can send and receive the required protocols. For more information, see the "Using the PMC with the Windows XP Firewall" section on page 8-18

- Network limitations may prevent some PMC client machines from sending audio. In this case, choose the remote location to connect to Cisco IPICS. For more information, see the "Troubleshooting Multicast Communications Issues" section on page 8-19.

- Monitor the server status connectivity indicator for and other connectivity indicators for connection information. For more information, see the "Support for Cisco IPICS Recovery" section on page 6-1.

- If you use a docking station or pluggable audio devices with your client machine, close the PMC client and unplug your audio devices before you undock your PC; otherwise, your PC may become unresponsive and require you to reboot.

- The Cisco IPICS server contains the location information to determine how the PMC should connect. For optimum connectivity and higher quality audio, use the most appropriate location for your connection type when you log in to the PMC. If you choose a location and you do not hear any voice traffic, choose a different location until you hear the audio on the channel. For more information, see the "Location Support" section on page 3-18.

- If both wired and wireless connections are active, and if you selected a location other than remote, either disable the wireless connection or make sure that the PMC uses the IP address that is assigned to the wired connection. For more information, see the "Resolving IP Address Changes" section on page 8-13.

Login Caveats

This section describes the login caveats that pertain to this release of Cisco IPICS and it includes password caveat information that is contained in the "PMC Password Caveats" section on page 4-5. For information about using the PMC in offline mode, see the "PMC Offline Mode Caveats" section on page 4-7.

- The Cisco IPICS system allows only one instance of the PMC application to be open and only one user to be logged in to the PMC application on the client machine at a given time.

- If you need to log in to a PMC on a given client machine that already has another PMC user logged in, the original user must first log out of the application.

- A PMC user can log in to an unlimited number of different PMC applications at the same time; however, Cisco IPICS supports only the most recent PMC instance for use with the direct two-way and direct dial channel features. For more information, see the "Communicating with PMC Users via Direct Two-Way Channels" section on page 4-28.

- Any number of valid Cisco IPICS users can use the same PMC application, but not concurrently. See the "License Information" section on page 4-6.

- 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. Or, the PMC can log in to an alternate server if your primary server becomes unavailable. For more information about logging in to alternate servers, see the "PMC Login Procedure" section on page 4-8.

PMC Password Caveats

The following caveats pertain to the PMC password that you use to log in to the system:

Invalid Login Attempts

The following guidelines apply to the account lockout features

- If you incorrectly enter your password multiple times, such that you exceed the maximum number of invalid login attempts as configured in the server, your user account may be locked. In this case, the PMC does not allow you to log in to the system. A message displays to alert you to contact your system administrator to unlock your user account.

- If the number of invalid login attempts has been exceeded while you are already logged in to the PMC, the PMC allows you to continue to use the password for your current session. The PMC does not allow additional logins, however, until your user account is unlocked or your password is reset.

- If the number of invalid login attempts has been exceeded while you are logged in to the PMC via offline mode, the PMC allows you to continue to use the password after it returns to online mode.The PMC does not allow additional logins, however, until your user account is unlocked or your password is reset.

Password Expiration

The following guidelines apply to the password expiration feature:

- If you attempt to log in to the PMC after your password has expired, the PMC displays a message to alert you. In this case, the PMC does not allow you to log in to the system until after you have changed your password. To change your password, you must log in to the Cisco IPICS server and navigate to **Home > My Profile** to enter your old and new passwords. If you cannot access the server, contact your system administrator for assistance.

- If your password expires while you are logged in to the PMC, the PMC allows you to continue to use the password for your current session. You must change your password before the next login.

- If your password expires while you are logged in to the PMC via offline mode, the PMC allows you to continue to use the password after the PMC returns to online mode. You must change your password before the next login.

License Information

The Cisco IPICS server uses the PMC ID to track the version number of the PMC and to verify and manage concurrent PMC usage for licensing requirements.

Cisco IPICS uses the following criteria to determine license consumption for PMC users:

- Cisco IPICS PMC Usage—A PMC user consumes a license each time that the user logs in to a PMC session.

  If the same PMC user logs in to multiple PMC sessions from different PMC client machines, that user will consume multiple licenses (one for each PMC session).

> ✎
>
> **Note**   If all Cisco IPICS licenses have been used, your access to the system will be interrupted. If this situation occurs, make sure that you contact your system administrator to request that additional user licenses be purchased and installed immediately.

Server-PMC Login Sequence Interaction

When you log in to the PMC, and when the connection between the server and the PMC is operational, your login request flows over a secure web (HTTPS) connection for processing by the Cisco IPICS server.

> 🔍
>
> **Tip**   You can see if the connection to the server is active by looking at the server status connectivity indicator that displays on the PMC. When the PMC is connected to the server, a green indicator displays. When the PMC is not connected to the server, a red indicator and an alert icon displays to make you aware of the loss of connectivity. When you click this indicator, the Status menu opens and displays the IP address of your Cisco IPICS server. For more information about this connectivity indicator, see the "Using the Status Menu" section on page 5-6.

If the connection between the server and the PMC is not operational, the system allows you to log in locally on your PMC client machine and connect to the server in offline mode. See the "PMC Offline Mode Caveats" section on page 4-7.

Note Cisco IPICS does not prevent you from logging in to the PMC application if the connection to the server goes offline as long as you have had at least one successful login to the server.

The PMC reconnects when the server access is restored.

This section describes the initial login sequence for the PMC user; it includes the following topics:

- PMC Offline Mode Caveats, page 4-7
- PMC Login Procedure, page 4-8

PMC Offline Mode Caveats

When the connection to the server goes offline, the PMC enters offline mode. Offline mode allows you to continue to communicate during periods of server downtime.

Note The PMC also provides visual indication of server status connectivity so that you can be alerted when the connectivity to the server has been lost.

The following caveats apply to the PMC offline mode:

- You must have at least one successful login to the server before you can use the PMC in offline mode. (When the PMC cannot connect to the server, it uses the cached information that it obtained from its prior connection.)

- If the server goes offline while you are running the PMC, the system displays a message to alert you that the server is not available. The PMC enters offline mode with the current list of channels.

- When you use the PMC in offline mode, the Cisco IPICS server address that displays in the **Settings > Status** menu may show the IP address of the server that you were trying to connect to, and which is offline. In this situation, the server status may display as "disconnected" even though the configuration information reflects the last server that you successfully logged in to.

- If the server is offline when you start the PMC, the system displays a message to alert you. The PMC enters offline mode with the list of channels from the last online session. (Some channels may no longer work, depending on the connection type.)

- After the server returns to an online state, you may encounter an invalid user or password error when you try to log in to the PMC. This situation may occur if the PMC attempts to connect to the server while the server database is being restored. In this case, the login dialog box may display several times until the server database has been fully restored.

- If your user ID was deleted while the PMC was operating in offline mode, the system displays a message to inform you that your user name is not valid. The PMC then logs out and displays the normal startup login dialog box.

- If the RMS entries become changed while you are running the PMC, your SIP channels may become disconnected. The PMC retrieves the updated channel list, with the newly-allocated SIP channels, after successful login to the server.

For information about operations that require the server to be online, see the "The Role of the Cisco IPICS Server" section on page 3-8.

PMC Login Procedure

To log in to the PMC application, perform the following procedure:

Procedure

Step 1   Double-click the **PMC** icon on your desktop or navigate to **Start > Programs > Cisco IPICS > PMC** to launch the application.

The Cisco IPICS login prompt displays.

Step 2   To log in to the PMC, enter the following information:

    a.   Your **server IP address** or **server host name** (or choose your server IP address from the drop-down list box)

    b.   Your **user name**

    c.   Your **password**

    d.   Click **OK**

If you cannot connect to your primary server, proceed to Step 3.

Tip Be aware that login user names and server host names are case-insensitive; that is, you can enter either upper case or lower case characters for these names. However, passwords are case-sensitive.

The PMC logs in to the Cisco IPICS server and sends this login information over a secure HTTPS connection.

- If your login was successful, the server provides the ability for subsequent local logins.

- If your login was not successful and you receive a failure notification because the PMC application could not communicate with the server, you can log in to the PMC locally, as long as you have already successfully logged in to the Cisco IPICS server. Or, you can log in to an alternate server, if one is available.

Note If the PMC becomes disconnected from the Cisco IPICS server, it continues to operate in its existing state; that is, the PMC can continue with its existing voice channels but it is not informed of any changes to the channel list until server connectivity is re-established.

Step 3 If the primary server is not accessible, and if there are alternate servers to choose from, follow these steps to connect to an alternate server:

- **a.** Enter the alternate **server IP address** or **host name** (or choose an alternate server IP address from the drop-down list box); then, enter your **user name** and **password**.

- **b.** Click **OK**.

Tip The last server IP address that you successfully connected to displays as the default server when you next launch the PMC.

For more information about connecting to alternate servers, see the "Support for Cisco IPICS Recovery" section on page 6-1.

✎

Note If you incorrectly enter your password multiple times, such that you exceed the maximum number of invalid login attempts as configured in the server, your user account may be locked. In this case, you must contact your system administrator to unlock your user account.

Step 4 After successful login, the Cisco IPICS server checks the PMC version number.

If a PMC update is available for download, a message displays to alert you. If the update is optional, you can choose to upgrade the PMC at a later time. See the "Performing an Optional Upgrade" section on page 2-23 for more information.

If the system detects an incompatible version of the PMC, a message displays to alert you that the system must perform an upgrade immediately. See the "Performing a Required Upgrade" section on page 2-25 for more information.

If the PMC version is current, the server sends the list of locations that have been associated with your user ID.

Step 5 Choose your default location and your PMC version from the drop-down list boxes; then, click **OK**.

✎

Note The PMC version drop-down list box includes the PMC versions that are compatible with the server. The location information that displays in the drop-down list box is configured in the Cisco IPICS server. Contact your system administrator if your location information does not display as an option.

Step 6 The PMC sends its location information to the server and requests its configuration updates.

✎

Note The PMC sets the location once per login sequence, but the server may also process the location information through the updates that it receives from the PMC.

After the login has completed and the location has been set, the server maintains the PMC session information to ensure that only one session exists on the server for each PMC.

Step 7 The PMC retrieves the personalized list of visible channels/VTGs from the server.

Note You may see various channel states on the PMC. For instance, if your ability to transmit on a channel has been disabled by the server, the channel appears dimmed. For more information, see the "Configurable Server Attributes" section on page 3-15. For information about channel behavior and caveats that pertain to the touch screen skins, see the "Touch Screen Skin Caveats" section on page 4-18.

Step 8 Click the **Activate** button on the PMC application to directly join the channel or VTG and hear the audio stream.

Tip 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 channel. 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. For more information about channel activation issues, see the "Identifying Channel Activation Issues" section on page 8-23.

After the PMC connects with the server, the channel on the PMC application becomes activated and appears highlighted to indicate that it is in an active state.

Step 9 Click the **PTT** button and hold it to talk.

The channel highlights and changes color to indicate that you are transmitting traffic.

Note If the channel appears dimmed, the PMC is not transmitting traffic. For instance, if you mute the microphone and click the PTT button or if there is a network transmission problem, the channel appears dimmed on the PMC to indicate that transmission is not occurring.

Step 10 When you are done talking, release the left mouse button to return to listen-only mode.

The receive graphical indicator blinks green to indicate that you are receiving traffic. (This indicator remains illuminated for several seconds after the receive transmission has ended.)

Tip   To talk on one or more channels at the same time, you can select the channels that you want to talk on and click and hold the **All Talk** channel. You can also use the PTT latch functionality. (You need user permissions for both of these features.) For more information about using the latch functionality, see the "Using the Latch Functionality" section on page 4-17.

Related Topics

- Architecture/Deployment, page 1-15
- Maintaining and Upgrading the PMC Application, page 2-16
- Performing an Optional Upgrade, page 2-23
- Performing a Required Upgrade, page 2-25
- License Information, page 4-6

Using the PMC Application

This section provides information about how to use the PMC application and describes the various interactions that occur; it includes the following topics:

- Accessing Online Help, page 4-13
- Activating the PMC Buttons, page 4-13
- Joining a VTG, page 4-14
- Dynamic Configuration, page 4-14
- Channel Interactions, page 4-15
- End-user Features and Interactions, page 4-20
- Traffic Activity, page 4-35

Accessing Online Help

To access online help for the PMC, follow this procedure:

Procedure

Step 1   Position your cursor over the PMC window that displays on your desktop.

Step 2   Take one of the following actions to access online help:

- Click the **Menu** button that displays on the PMC; then click **Help**.
- Right-click in the PMC interface and click **Settings**; then, click **Help**.
- Press **F1** to access online help.

The PMC online help information displays.

Activating the PMC Buttons

When you use the 18-channel advanced console, each channel contains a PTT channel button with send/receive feedback, an activation control button that toggles on and off, a channel select check box, voice replay controls, volume control, volume graphical indicator, and a latch control indicator (if the channel has been configured as latchable in the server and if you have permission). For more information about using the latch functionality, see the "Using the Latch Functionality" section on page 4-17.

See Figure 1-1 on page 1-8 for a description of the buttons that display on the 18-channel advanced console.

The PMC provides the ability to individually control the volume on each channel. The volume slide bar controls the level of audio output for the specified channel as mixed with all other channels.

The volume level that the volume graphical indicator bar displays may appear slightly different depending on the granularity of the specific PMC skin that you use.

If you configured key mapping, you can use the assigned key, which displays on each mapped channel, to transmit instead of using your mouse.

Joining a VTG

When you are logged in to the PMC and the dispatcher creates a new VTG for you to join, the PMC retrieves the channel list, which includes information about the VTG, from the Cisco IPICS server; the server automatically refreshes the PMC window to show the updated channels.

To join the VTG, click the **Activate** button. (The channel on the PMC application becomes activated and appears highlighted to show that it is in an active state as long as your ability to transmit has not been disabled by the server.)

Click the highlighted PTT channel button and hold it to talk; transmission becomes enabled on the multicast stream. When you are done talking, release the left mouse button to return to listen-only mode.

See the "End-user Channel Interaction" section on page 4-16 for information about the various channel states.

Figure 4-1 shows an illustration of the interaction with the PMC user.

Figure 4-1   *Interaction with the PMC User*
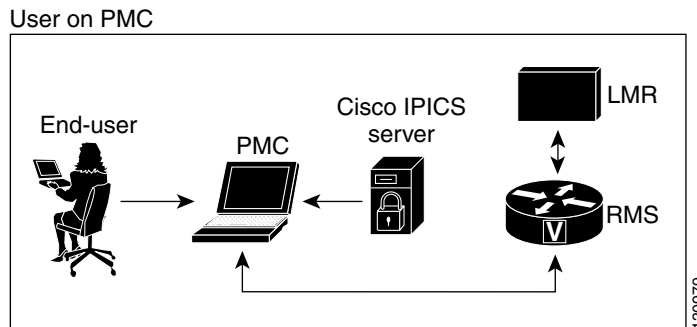
Dynamic Configuration

This section describes the dynamic configuration that the Cisco IPICS server performs for the PMC application. It also includes information about the PMC update procedure.

The Cisco IPICS server manages the configuration for the PMC so that you do not need to perform any configuration tasks. The server configuration includes information such as the system level PMC configuration, master skin distribution, user configuration, and channel definitions and authorized actions per channel.

In general, the PMC retrieves all configuration and channel connectivity data from the Cisco IPICS server, however, you can change the PMC skin by choosing from the available options that appear in the Settings menu. For more information about accessing the Settings menu, skin, see the "Configuring the PMC Skins" section on page 5-2.

The PMC includes the ability to check the Cisco IPICS server for configuration changes (when the server is online); if the application status changes, the PMC securely connects to the server to update its current state.

At regular intervals, the PMC sends a status request to the server for each PMC user. This status request determines if the user configuration needs an update and/or if the server has a request for the PMC to execute certain commands, such as an update. (The Cisco IPICS system performs a user level update only when a valid PMC user is logged in to the PMC application.)

Channel Interactions

This section describes the channel interactions on the PMC in the following topics:

This section includes the following topics:

- Support for Maximum Number of Channels, page 4-15
- End-user Channel Interaction, page 4-16

Support for Maximum Number of Channels

With this release, the PMC supports a maximum of eighteen channels. (The PMC allows the assignment of up to 50 channels, but only 18 channels may be active at the same time.) This support includes the ability to simultaneously receive and/or talk on one or multiple channels.

You can change the PMC skin to enable your own "look and feel," by choosing from one of the following skins as described in Table 5-1 on page 5-2.

The PMC modifies the PTT behavior on the touch screen skins. For more information, see the "Touch Screen Skin Caveats" section on page 4-18.

For more information and instructions about configuring the PMC skins, see the "Configuring the PMC End-User Interface" section on page 5-1.

Note
- Be aware that you may receive and transmit only on the channels that have been assigned to you and that are visible on the PMC client.

- If you have more than 18 channels assigned to you and you use the 18-channel advance console, the channels that are visible to you depend on whether or not the channel has already been visible on the PMC. That is, Cisco IPICS enables visibility of the last 18 channels that you saw. So, if a new channel has been assigned to you but it has not been previously visible, the channel will not display on the PMC when there are more than 18 channels assigned to you. If the channel is one that has been assigned and previously visible, it displays on the PMC.

- You can use the channel reordering functionality to move certain channels beyond the channel limit of the skin so that you can view the channels that you need. For more information about channel reordering, see the "Reordering Your Channels" section on page 4-28.

End-user Channel Interaction

As the Cisco IPICS standalone application, the primary goal of the PMC is to enable the PMC user to easily communicate on multiple PTT audio channels.

The PMC structure enables convenient and optimized interaction with multiple channels and different channel types. All channel types that the dispatcher has assigned and activated for your use appear on the PMC. You can selectively activate any of the assigned channels by clicking the **Activate** button on the PMC.

Channel Appearance on the PMC
- Channels that appear in blueprint mode on the PMC indicate that the channel/VTG is available and waiting for you to activate.

- If the channel has been disabled, you will not be able to activate the channel (none of the buttons will appear).

- If your ability to transmit on a channel has been disabled by the server, the channel appears dimmed on the PMC.

- When the channel appears dimmed, the PMC is not transmitting traffic. For instance, if you mute the microphone and click the PTT button or if there is a network transmission problem, the channel appears dimmed on the PMC to indicate that transmission is not occurring.

This section also includes information about the following topics:

Using the Latch Functionality

Your ability to latch a channel is configured in the server. If enabled, you can use the PTT latch functionality to talk on multiple channels at the same time. To latch, or lock in, the PTT channel button, click the latch indicator that displays to the right of the channel. Alternatively, you can position your cursor over the PTT button and then press the **Shift** key while you click the left mouse button.

When the channel has been latched, the PMC displays the highlighted latch indicator to the right of the channel. Follow this procedure for each channel that you want to talk on. To clear the latch, click the **PTT** button without holding the Shift key.

Latch functionality is not affected when the PMC loses focus, or is no longer the active application. In this situation, a latched channel remains latched even if the PMC loses focus.

Note   Cisco IPICS does not support latching of the All Talk channel on the PMC.

When you latch a channel, the channel remains latched until one of the following activities occurs on the PMC:

- Alert tones are sent and complete
- DTMF tones are sent
- The All Talk channel is pressed and released
- The channel is deactivated, unassigned or not enabled for latch

- The PTT button for the channel is pressed and released

- The latch indicator is pressed and released

⚠

Caution   Use the latch functionality with caution. Be aware that when you latch the PTT button, this action blocks transmissions from half-duplex radios when these devices are attached to the channel or VTG via an LMR gateway.

Touch Screen Skin Caveats

When you use the touch screen skins, the PMC modifies the PTT behavior in the following ways:

- The transmit graphical indicator blinks red to indicate that you are transmitting traffic.

- If your ability to transmit on a channel has been disabled by the server, the PTT button will not highlight.

- If the channel has been disabled by the server, you will not be able to activate the channel.

Channels/States

Table 4-1 shows the channel/VTG states that Cisco IPICS supports for user interaction.

If a name, or label, has been configured in the server for the PTT button, that name displays in the channel area as part of the PTT button on the PMC. You may also see channel type indicators, along with other visual indicators that have been configured in the server.

For more information, see the "Channel Information" section on page 3-13.

🔎

Tip   When the channel appears dimmed, the PMC is not transmitting traffic.

Table 4-1   *End-User Channel Interaction States*

VTG/Channel State	PMC Button Indication	Description
Activating	The Activate button appears highlighted	This state becomes effective when you click the **Activate** button. The other PMC buttons remain in an inactive state as the system attempts to activate and connect. **Note** If your ability to transmit on a channel has been disabled by the server, the channel appears dimmed (none of the buttons appear on the PMC).
Activated	The PTT channel button and volume indicator appear highlighted	This state indicates that the SIP (unicast) or multicast channel is fully operational. When a channel is enabled and activated, all of the PMC buttons are operational.
Not Activated	No PMC buttons appear highlighted	This state becomes effective when you click the **Activate** button again (to deactivate the channel) or if the connection terminates. When a channel is enabled but not activated, the PTT channel button appears in blueprint mode but you may click the **Activate** button to activate the channel.
Disabled	No PMC buttons appear highlighted and you cannot activate the channel	When a channel is disabled, the channel appears dimmed and none of the PMC buttons appear so that you cannot activate the channel. However, you can still view the channel or VTG label, if one was configured in the server.
Unassigned	No PMC buttons appear highlighted and you cannot activate the channel	A channel that is unassigned appears on the PMC as completely empty, with no buttons and no channel name. You cannot activate or use an unassigned channel.

Table 4-1   End-User Channel Interaction States (continued)

VTG/Channel State	PMC Button Indication	Description
Listen-only	The PTT channel appears dimmed	When a channel is configured for listen-only mode, the channel appears dimmed on the PMC. In this case, you may listen in to the channel but you may not transmit.
Secure	All PMC buttons are functional	The PMC provides a visual indication of secure channels by displaying an icon in the lower left corner of the PTT channel. **Note** Cisco IPICS supports the configuration of secure channels, but does not provide support for secure VTGs.

End-user Features and Interactions

This section contains information about the following PMC end-user features and interactions. (Some of these features may be available only with the 18-channel PMC advanced console.) This section includes the following topics:

- Using Keyboard Mapping, page 4-21
- Using DTMF to Generate Tones, page 4-24
- Selecting One or More Channels and Using the All Talk Channel, page 4-25
- Playing out Alert Tones, page 4-26
- Reordering Your Channels, page 4-28
- Communicating with PMC Users via Direct Two-Way Channels, page 4-28
- Communicating with Phone Users via Direct Dial Channels, page 4-30
- Using the Voice Replay Feature, page 4-32

Using Keyboard Mapping

Cisco IPICS allows you to use keyboard mapping to assign specific keys to each of your channels. This feature provides transmit functionality by allowing you to press and hold the assigned key, to transmit on a channel, by using the keys on your keyboard. This control maps to specific channels on your PMC.

Cisco IPICS also supports the use of a device that simulates key down and key up events, such as a footswitch or other USB device. (Refer to the product documentation that you received with your USB device for details about how to configure it to generate the proper key; this device must be capable of simulating key held events as if you were holding down a key on a keyboard.)

Note
- Cisco IPICS provides support for devices that behave exactly like a keyboard and require no special support for the PMC to recognize it.

- To use these devices, the PMC must already be the active application (in focus) or the footswitch/USB device must be able to cause the PMC to be in focus.

- The device must be capable of generating 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).

- The device and support applications must be able to send key down and key up events that correspond to keys "e" through "z" and/or the "Tab" and "space" keys.

To map your channels, you choose from a list of letters that range from "e" to "z." The PMC displays only those keys that have not been previously used to map to a channel.

Tip Cisco IPICS does not allow you to map the same key to multiple channels, so any key that has already been mapped to a channel cannot be used to map to another channel until you unmap it.

If you have mapped a key to a channel that gets deleted from your PMC, the key that you mapped becomes available for you to map to another channel.

To configure the keys for each channel, navigate to the **Settings > Channels** menu. For detailed information, see the "Configuring the Channels and Advanced Settings" section on page 5-7.

After you define the key mappings for your channels, the PMC displays the assigned key on each channel that you configured. When you want to transmit on that channel, you can press and hold the assigned key instead of using your mouse. When you are done talking, release the key.

> **Note** The key mapping that you configure is stored locally on the PMC client machine and applies only to the individual user who configured the key mapping assignments on the PMC client machine that you logged in to. If you use another PMC client machine, be aware that you must reconfigure your key mapping assignments.

Keyboard Mapping Caveats

The use of keyboard mapping may interact with the following PMC features:

- Certain Windows events and applications may change the focus from the PMC; that is, the PMC may no longer be the active application on the desktop. A change in focus may occur when a pop-up message displays and interferes with the expected operation of the PMC.

    - Under normal conditions, transmission continues until the method that you used to initiate the transmission has been ended, such as releasing the PTT button. However, if the focus changes when you are using a mouse, keyboard, or USB device to transmit on a channel, the transmission stops when the PMC detects that it is no longer the active application (or has lost focus). In this case, the PTT button changes color to indicate that it is no longer transmitting; this break in transmission occurs even if you continue to hold down the mouse or mapped key. After the PMC regains focus, you can begin transmitting again.

    - You may also encounter a loss of focus when you press and hold a mapped key and right-click the mouse in the PMC interface at the same time. If the key does not perform a valid PMC function, you may hear a "ding" or "beep" sound when you release the key or while the key is held. You may also hear these sounds when you press a key that performs a valid PMC function, such as the "s" key, which is a shortcut for the Settings menus. In these situations, the window that has the focus tries to

interpret the key that you pressed. These behaviors, as part of the standard operation of the Windows operating system, occur when the focus has been removed from the PMC.

Note   Be aware that the PMC must be the active application when you press the All Talk channel or the PTT channel button. If the PMC loses focus (and is no longer the active application), the PMC stops transmitting. The PMC continues to transmit, however, if the channel is latched.

- You can transmit audio in several ways: by clicking or pressing the PTT button on a channel, checking the multiselect check box along with your mouse or touch screen client or mapped key, pressing a key that is mapped to the specific channel, using a device that simulates entry of a mapped key (such as a footswitch), or by entering the CLI **play** command from the Windows command line of the PMC.

  By using any of these methods, the transmission should continue until the method that you used to initiate the transmission has been ended. That is, if you press a mapped key and also click the PTT button with the mouse at the same time, releasing only the PTT button does not stop the transmission. You must also release the key that is mapped to the channel for the transmission to stop. Exceptions can occur when you simultaneously perform functions that may cause the PMC to behave in different ways. For example, if you press a mapped key, then click the PTT button with your mouse and then release the mapped key, the transmission stops.

- The keys that you can use for dual-tone multifrequency (DTMF) tone generation and the keys that you can assign to your channels by using keyboard mapping are mutually exclusive. That is, on an ASCII keyboard, Cisco IPICS supports the use of the number keys, the letter keys from 'a' through 'd' and the '*' and '#' symbols for DTMF use. The letter keys from 'e' through 'z' are reserved for PTT keyboard mapping. For more information about DTMF tone generation, see the "Using DTMF to Generate Tones" section on page 4-24.

Using DTMF to Generate Tones

You can use this feature to transmit DTMF tones for a fixed time duration to any specific channel. Cisco IPICS supports DTMF tone generation by using inband signaling. That means, when you press a key that supports DTMF tone generation, Cisco IPICS sends these tones as part of the normal voice transmission.

To generate DTMF tones, follow these steps:

1. Check the channel select check box for all channels that you want to transmit on. The channel select check box displays in the lower left corner of the channel on the PMC. Alternatively, you can select all channels by checking the Select All (or multiselect) check box, which is located at the bottom of the 18-channel PMC skin.

2. Then, press one of the supported keys, which include the number keys from '0 through 9, letter keys from 'a' through 'd' and the '*' and '#' symbols, on your keyboard.

   DTMF tones are generated inband for the duration of time that you press and hold the key.

DTMF Tone Generation Caveats

The following caveats pertain to the use of DTMF tones:

- Cisco IPICS supports the use of the number keys, the letter keys from 'a' through 'd' and the '*' and '#' symbols for DTMF use.

- Cisco IPICS sends DTMF tones only to the selected channels.

- To transmit DTMF tones, the PMC must be in focus; that is, it must be the active application that appears on your desktop. If the PMC loses focus while you are transmitting DTMF tones, the transmission stops and the PTT button changes color to indicate that it is no longer transmitting. After the PMC regains focus, transmission begins again.

- The G.729 codec cannot appropriately transmit DTMF tones and alert tones; for more information, see the "Playing out Alert Tones" section on page 4-26.

- When you use spatial positioning on the PMC, the DTMF tone that you play out is audible only on the highest position channel on the PMC. Check the **Settings > Channels** menu for the positioning information of your channels on the PMC.

- If your permission to transmit is revoked on the highest position channel, you will no longer hear the DTMF tone that is being played out, although the PMC continues to transmit the tone via other selected channels.

- If you attempt to transmit a DTMF tone while the network is down, the DTMF tone is audible to the sender even though it is not actually being transmitted. In this case, the DTMF tone that the sender hears is a confirmation of the request and not an indication that the tone is being sent. When this situation occurs, the PTT channel button appears dimmed, and the transmit indicator on the touch screen skin does not blink, to indicate that transmission is not occurring. For more information about the appearance of channels in various states, see the "Channels/States" section on page 4-18.

Selecting One or More Channels and Using the All Talk Channel

Cisco IPICS allows you to select one or more channels on the PMC for audio transmission. You can select a single channel or multiple channels by checking the channel select check box that displays in the lower left corner of the channel on the PMC. When you use this feature, a check mark displays in the check box of each channel that you have selected.

Alternatively, you can select all channels by clicking the Select All (or multiselect) button, which is located in the bottom portion of the 18-channel PMC skin and use the All Talk channel to talk.

Check the channel select check box or click the multiselect button to select channels that you want to use to send audio transmissions or alert tones. For more information about alert tones, see the "Playing out Alert Tones" section on page 4-26.

Multiselect Caveats

The following caveats pertain to the use of the multiselect feature:

- The multiselect button may reset under the following conditions:
    - Reconfiguration of the PMC skin
    - Stopping and restarting the channel
    - Channel reconfiguration to the listen-only or disabled state
    - Removal or reassociation of the channel

- Channel audio quality may degrade when multiple channels simultaneously send the same transmission. This situation is most noticeable to recipients when you play alert tones. To help resolve this issue, lower the volume or deactivate the channels that you seldom use and avoid sending the same alert tone to more than 3 channels at the same time.

- If the focus changes on the PMC while you are using the All Talk button to transmit, the transmission stops when the PMC detects that it has lost focus. After the PMC regains focus, you can begin transmitting again.

Playing out Alert Tones

In this release, Cisco IPICS provides the capability for the PMC to broadcast .wav files that contain alerting tones (hereafter referred to as alert tones) to a variety of Cisco IPICS users at the same time. Cisco IPICS stores alert tones in a set on the server. An alert tone set is associated with an ops view; therefore, each PMC user can see only one tone set based on the ops view association. For more information about ops views, refer to the *Cisco IPICS Server Administration Guide.*

If your PMC includes alert tones, you can play out these tones on one channel or multiple channels on the PMC. The PMC plays out alert tones only on the channel(s) that you select.

To play out an alert tone, you must first select a channel (or multiple channels) by checking the channel select check box that displays in the lower left corner of the channel on the PMC. Then, click the tone that you want to play out. The PTT channel highlights to indicate that transmission is occurring. Alert tone playout is not affected when the PMC loses focus; that is, alert tones continue to play out even if the PMC loses focus.

Tip Alert tone buttons do not actively display on the PMC until you select at least one channel by checking the channel select or multiselect check box.

The alert tone playout continues until it completes or you click another tone to play. To stop alert tone playout, deactivate and then reactivate the channel or click the stop tone if it is included in your list of alert tones.

Note The PMC alert tone feature requires the use of compatible alerting tone files. These files must be .wav files that are encoded in Pulse Code Modulation (PCM), which is a sampling technique that digitizes analog signals. These .wav files must

be encoded in PCM format with 8 bits monaural samples at 8000 Hz sampling rate, for a total of 64 kbps. While higher and lower bit rates may seem to work, Cisco IPICS does not support the use of any other encoding or bit rates, as they may produce inferior sound quality. (Any file that is used with the G.729 codec may sound inferior due to its encoding algorithms; for more information, see the "Codec Support" section on page 3-22.) In addition, all alerting tones should be encoded to a nominal value of -20 decibels relative to one milliwatt (dBm) and begin and end with zero deflection to eliminate or minimize "popping" or "clicking" sounds.

Alert Tone Playout Caveats

Be aware of the following caveats when you use alert tones on the PMC:

- When you select a channel and click a tone to play out, the tone begins to play out on that channel. If you want to transmit on the same channel while the tone is playing out, Cisco IPICS mixes your voice with the tone.

- If you deselect one of the channels after you selected multiple channels for transmission and click and hold the All Talk channel, Cisco IPICS terminates the transmission on the channel that you deselected but continues it on the channel that is still selected.

- While tone playout is occurring, if you deselect one of the channels after you selected multiple channels for transmission, Cisco IPICS continues to play out the tone on all channels that you originally selected.

- The PMC allows the use of either the alert tone playout feature, DTMF input, or the **Play** command at one time. That is, if an alert tone is currently playing and you invoke the **PMC.EXE -Play** *file* [**-line** *#]* command to the same channel, the alert tone on that channel stops playout immediately and is replaced with the output of the **-Play** command. If you press a DTMF digit, the alert tone or the -Play output stops immediately and the system sends the DTMF digit.

- Cisco IPICS allows you to talk over tones that are being played out by supporting the simultaneous use of the PTT channel button or the All Talk channel button.

- If you do not have permission to use any of the alert tones, the server does not download these tones to the PMC client machine. In this case, the alert tone buttons either do not display or appear disabled on the PMC.

- If your access to alert tones has been restricted by the server, your access to the All Talk channel button is similarly restricted.

- If the server assigns more alert tones that your PMC skin can display, the PMC pops up a message to alert you.

- Channel audio quality may degrade when multiple channels simultaneously send the same transmission. This situation is most noticeable to recipients when you play alert tones. To help resolve this issue, lower the volume or deactivate the channels that you seldom use and avoid sending the same alert tone to more than three channels at the same time.

- When you use spatial positioning on the PMC, the alert tone that you play out is audible only on the highest position channel on the PMC. Check the **Settings > Channels** menu for the positioning information of your channels on the PMC.

- If your permission to transmit is revoked on the highest position channel, you will no longer hear the alert tone that is being played out, although the PMC continues to transmit the tone via other selected channels.

Reordering Your Channels

The server designates the initial order in which the channels display on the PMC. However, you may reorder or reposition the channels that display on your PMC by accessing the **Settings > Channels** menu.

The ability to reorder your channels allows you to place channels in the order that you want to see them. For example, you can rearrange your channels so that the channels that you use most often appear at the top of the PMC and the ones that you use infrequently appear at the bottom of the PMC. This feature helps to optimize the space on your PMC skin so that you may be able to use a skin that includes fewer channels.

For more information about reordering your channels, see the "Configuring the Channels Menu Options" section on page 5-8.

Communicating with PMC Users via Direct Two-Way Channels

Cisco IPICS supports the use of direct, point-to-point PTT connections between online PMC users. This type of PMC communication operates similarly to other PMC channels, however, the direct two-way channels allow PMC users to talk directly from one user to another by using the PMC. (There is no capability to connect to other third parties when you use direct two-way channels.)

To enable this support, a direct two-way, bidirectional association is configured in the server on a per-user basis. The PMC then displays the direct two-way channel on your PMC by using the name of the user with whom you have an association in the server configuration. The channel may also include an indication of the channel type, such as 2-way.

Either online PMC user can activate the direct two-way channel. After one of the PMC users activates the channel, Cisco IPICS automatically activates the channel at the other end of the connection, as long as the channel is visible on the PMC skin. (If the channel is not visible, you may be able to reorder the channels on your skin; for more information, see the "Reordering Your Channels" section on page 4-28.) When the connection has been established, the PTT button highlights to signal the capability to transmit.

When one of the PMC users deactivates the channel, the other end of the connection becomes deactivated as well.

Direct Two-way Caveats

The following caveats pertain to the use of direct two-way channel connections on the PMC:

- Direct two-way channels are associated and disassociated in the server, so you do not have the ability to permanently deactivate or disconnect this channel. If you deactivate a direct two-way channel, the associated PMC user at the other end of the connection can reactivate it. This action causes the PMC to automatically reactivate the channel on your PMC. If you do not want to listen in to this channel, you can lower the volume.

- A single PMC user may have more than one direct two-way channel on the PMC to communicate on a one-to-one basis with different associated PMC users.

- Users must be logged in to Cisco IPICS to use PMC direct two-way channel connections. If both PMC users are online, the PMC displays the channel in an active state for all associated users. If one of the PMC users is not online, the PMC displays the channel in a disabled state for all associated users. (If your PMC client machine goes offline, the PMC notifies the associated PMC user by disabling the channel.)

- If a single PMC user logs in to Cisco IPICS multiple times by using the same login information, the system creates only one direct two-way channel for that user and links it to the most recent user login.

> ✎
>
> **Note** If previous direct two-way channels were established for the user, Cisco IPICS disables all direct two-way channels except for the most recent user login. If the PMC is not connected to the server when the simultaneous login occurs, the previous PMC instance maintains its login to the server (the PMC does not get logged out until it reestablishes connectivity with the server).

- The PMC does not attempt to retry the channel activation if the connection to the associated PMC user cannot be established. In this case, a warning indicator displays next to the channel and a busy tone plays out on the PMC. Connection failure may be caused by situations such as a network interruption or reset/restart activity at the remote end, if the PMC user does not have available channels to use, or if the online status of the user is undetermined by the Cisco IPICS server. When this situation occurs, you must deactivate the direct two-way channel; then, reactivate the channel to try the call again.

- If a direct two-way channel is associated to your user ID but your PMC client has no available channels, the PMC displays a message to inform you and request that you choose another skin. If you do not choose another higher-capacity skin, the associated PMC user at the other end of the connection hears a busy tone upon attempting to activate the channel.

Communicating with Phone Users via Direct Dial Channels

Cisco IPICS supports the use of direct, point-to-point connections that enable a PMC user to directly dial a phone number that is connected via the PSTN or an IP phone that is reachable via the customer network. (Similar to the two-way direct connection, there is no capability to connect to other third parties when you use direct dial channels.)

This direct dial feature allows a PMC user to use the PMC PTT features to speak directly with a telephone user. The destination telephone can be any phone that is reachable by the SIP provider. (The SIP provider routes the call to the number that you dial.) As SIP-based calls, direct dial calls route from the PMC through the RMS to the SIP provider.

To enable this support, a direct dial phone number is configured in the server, on a per-user basis, where the dial phone number is associated to a PMC user. Every phone that may be called by the PMC direct dial feature must have its destination

number configured in the server and assigned a label. Then, users are associated with these phones; each phone association appears on the PMC as a channel, with the unique identification of direct dial.

For more information about SIP providers and the direct dial configuration, refer to the "Configuring and Managing the Cisco IPICS Policy Engine" chapter in the *Cisco IPICS Server Administration Guide*.

After the configuration is completed, the PMC displays the direct dial channel on your PMC by using the description that was configured in the server, along with an indication of the direct dial channel type.

To use the direct dial channel, you must first click the **Activate** button to activate the channel and dial out to the PSTN or IP phone user. The PTT button highlights to signal the capability to transmit and the PMC automatically dials the phone number that was configured in the server.

> **Note**   As the call is being placed through the PSTN or customer network, you may hear a ringing tone on the PMC channel. If the call cannot be completed, you may hear a busy tone or an error message that provides additional information. (The PSTN user hears the usual ring tone, if the PSTN phone is not busy.)

After your call is connected, you can talk to the PSTN or IP phone user by clicking and holding the PTT channel button or by latching the direct dial channel, if you have permission to use the latch functionality. For more information about the latch functionality, see the "Using the Latch Functionality" section on page 4-17.

The call terminates when the PMC user deactivates the channel or the PSTN or IP phone user hangs up.

Direct Dial Caveats

The following caveats pertain to the use of direct dial channel connections on the PMC:

- The PMC does not attempt to retry the call if the PSTN or IP phone user does not answer the phone, if the PSTN or IP phone is busy, or if the call fails for any reason. In this case, a warning indicator displays next to the channel and a busy tone plays out on the PMC. When this situation occurs, you must deactivate the direct dial channel; then, reactivate the channel and try the call again.

- The dial destinations that you are allowed to call depend on the configuration in the Cisco IPICS server and your specific telephony deployment.

- Cisco IPICS does not support the call transfer feature when you use direct dial. If a PSTN or IP phone user attempts to transfer a direct dial call, the Cisco IPICS system terminates the call.

Using the Voice Replay Feature

Cisco IPICS supports the ability for the PMC to maintain a rolling history of voice transmissions, on a per-channel basis. With this feature, the PMC constantly records the aggregate inband voice transmissions that are played out on a channel. It then buffers the audio in talk spurts that are based on detected aggregate silence; this buffering occurs on a per-channel basis so that each channel maintains its own recording buffer. (A talk spurt occurs after a period of silence.) If two or more PMC users talk at the same time, the system detects silence only after both users stop talking.

In playback mode, the PMC mixes live and buffered (recorded) audio so that you can talk and play audio on the same channel at the same time. In this mixed audio mode, the PMC records only live audio.

When the PMC replays buffered audio, it simultaneously receives and buffers new audio. The new audio gets added to the buffer and the existing audio get pushed toward the end of the buffer. The PMC mixes the new audio with the buffered playback.

Note   The PMC compresses and buffers these voice transmissions in the memory of the PMC client machine. The size of the voice replay buffer is 60 seconds per channel (the playback window size is not configurable; it is the same for all channels). Be aware that Cisco IPICS does not provide support for these voice transmissions to be saved to a file.

To enable this feature, the PMC includes the following voice replay controls that allow you to choose to jump back (rewind) or jump ahead (fast forward) to available recorded transmissions for playback on one or more channels.

Note   Upon activation of a channel, the voice replay controls display on the lower half of the PMC channel when there is audio in the buffer; when there is no audio in the buffer, the voice replay controls appear dimmed on the PMC.

- Jump back—Click this button to enter voice replay mode. The PMC rewinds the voice transmission 7 seconds or to the beginning of the current talk spurt, whichever number is less. The PMC mixes the audio so that it plays out the buffered audio at the same time that it plays out live audio. You can click this button again to jump back an additional 7 seconds from the current playback position or you can continue to click this button until the PMC reaches the end of the voice buffer.

  When you click the jump back button, the voice replay indicator displays the amount of the replay buffer that remains and the jump ahead button becomes enabled so that you can click it to fast forward to another point in the buffer.

  Tip   You must click the jump back, or rewind, button to enter voice replay mode and play out the available, recorded audio.

- Jump ahead—Click this button to fast forward the voice buffer by 5 seconds or to the beginning of the next talk spurt, whichever is less. Each click of this button, fast forwards the recording by another 5 seconds. If there is no available recorded audio to play, the PMC exits voice replay mode.

  Tip   When you click the jump back, or rewind, button, the PMC starts playout of the recorded audio and enables the jump forward button. Because the voice recording buffer contains only a small amount of data (60 seconds per channel), the PMC quickly reaches the end of the buffer and automatically disables the jump forward button. Therefore, the jump forward button may appear enabled for a limited amount of time. When you continuously and repetitiously click the jump back button, you may see the jump forward button flash as the PMC continues to enable and disable this button.

- Voice replay indicator—This indicator displays as an illuminated line that progresses during voice replay mode.
- Graphical display of buffered talk spurts—The PMC displays a graph that indicates that audio is being recorded.

Voice Replay Caveats

The following caveats pertain to the voice replay feature:

- The voice replay feature may stop playing if you change the spatial position setting while you are using this functionality. Therefore, make sure that you do not change the spatial position setting at the same time that you are using the voice replay feature.

- The PMC detects aggregate silence; it does not record audio during periods of silence.

- The PMC does not buffer individual audio streams. Instead, the PMC buffers the aggregate voice transmission (per channel) that is being played out to the speaker or headphone so that each channel maintains its own recording buffer.

- The total buffered audio is comprised of the last one minute of actual, incoming traffic that occurred on the channel.

- The PMC uses dynamically allocated memory to temporarily store the buffered audio. The PMC does not support saving the buffered audio to disk or other permanent storage.

- Because the PMC stores the voice replay buffers in memory on the PMC client machine, you lose access to your original voice replay buffers when you change PMC client machines. If the PMC client machine that you use has less than the required amount of memory, the voice replay feature may not be available or each voice replay buffer may be smaller (with a shorter voice replay time period). If you close your PMC or deactivate your channels and then restart the PMC, the voice replay buffer is emptied and no longer available.

- Any live audio that is received while the PMC is in voice replay mode will move the earlier audio toward the back of the audio buffer, where it will be eventually discarded when the maximum buffer size has been reached.

- The voice replay feature records only inband audio packets; it does not buffer DTMF tones or other tones that are not inband.

- Your ability to hear buffered audio while transmitting depends on the "RX Mute on PTT" setting on the channel. If you latched multiple channels or if you clicked the All Talk channel, the most restrictive "RX Mute on PTT" setting prevails for all channels. For more information about this setting, see the "Configuring the Channels Menu Options" section on page 5-8.

Traffic Activity

This section provides information about traffic and channel traffic activity interactions; it includes the following topics:

- Channel Traffic Activity Interaction, page 4-37

- User Channel Activity Interaction, page 4-37

The PMC supports the display of channel traffic activity (receive and transmit) along with the ability to tune in and tune out of the channel itself.

> **Note** To show traffic activity, the PMC provides graphical indicators, depending on the skin that you use. For instance, the touch screen skins include a transmit graphical indicator that blinks red to indicate that you are transmitting traffic. For information about caveats that pertain to the touch screen skins, see the "Touch Screen Skin Caveats" section on page 4-18

See Figure 1-1 on page 1-8 for an illustration of the 18-channel advanced console and the location of the graphical indicators.

Although the PMC skins may be configured to define the actual colors that are used, the Cisco standard defines the following conventions for the receive and transmit indicators:

Table 4-2   Channel Traffic Activity Indicators

Channel Traffic Activity Indicator	Description
Receive indicator	This graphical indicator illuminates and blinks green when you are receiving traffic. This indicator remains illuminated, in a solid color format, for several seconds after the receive transmission has ended to let you know that the voice traffic has stopped; this indicator also provides an indication of recent activity on a channel.
	Note Be sure to monitor the receive indicator for PMC traffic so that you do not talk over other Cisco IPICS users. When the receive indicator shows activity, you are receiving traffic. If you talk while you are receiving traffic, you are likely not being heard.
Transmit indicator	The PTT channel button highlights and changes color to indicate that you are transmitting traffic. The touch screen skins include a graphical indicator that blinks red when you are transmitting traffic.
	Note If you mute your microphone after you have clicked or latched the PTT button, the PTT channel button returns to a dimmed state; this change indicates that you are not transmitting traffic. When you unmute your microphone, the PTT channel button changes color to indicate that you are once again in transmit mode.

These graphical indicators provide useful visual aids that enable clear identification of the PMC traffic streams. When you are talking, you should monitor the receive indicator to see if it is blinking. If the receive indicator is blinking, you may be talking over another user. If you encounter this situation, release the PTT button to listen to the user who is talking. (To be sure that a user has stopped talking, wait for the receive indicator to display in a solid color format for a few seconds before you start to talk.)

Examples of how these indicators may appear are shown below:

- The channel may blink green when it receives traffic from the network.

- The channel may change color when there is PTT transmission while the PTT control is activated. (Or, if there is a graphical indicator for transmit activity, the channel may blink red when there is PTT transmission while the PTT control is activated.)

- When receive traffic activity displays, a graphical indicator reveals that traffic has occurred in the past on this channel; this feedback clears after five seconds.

Channel Traffic Activity Interaction

The following information describes the channel traffic activity interaction:

- Both the channel name and the traffic activity feedback can be mapped to the PTT button in the server. This allows both of these indicators to display as part of the PTT button itself.

- Cisco IPICS supports implicit floor control; that is, when the PMC wants to have the floor, the PMC assumes that the user will wait until there is no incoming traffic to enter transmit mode.

- The Cisco IPICS server has the ability to administratively stop the transmission of traffic onto a channel on a per-channel basis; in this situation, all transmission terminates immediately.

User Channel Activity Interaction

Your ability to view and use channels on the PMC depends on your user status.

- You can only view and use those voice channels that the dispatcher has assigned to you.

- You can choose to turn on any of the assigned PTT channels by clicking the **Activate** button on the PMC.

- If you activate and deactivate channels on the PMC while you are actively using one of the channels, the audio on the channel that you are actively using may become distorted.

- Channels that appear in blueprint mode on the PMC indicate that the channel/VTG is available and waiting for you to activate.

- If your ability to transmit on a channel has been disabled by the server, you will not be able to activate the channel (none of the buttons will appear) and the channel appears dimmed. (When the channel appears dimmed, the PMC is not transmitting traffic.)

- When a channel is disabled, the channel appears dimmed and none of the PMC buttons appear so that you cannot activate the channel. However, you can still view the channel or VTG label, if one was configured in the server.

- A channel that is unassigned appears on the PMC as completely empty, with no buttons and no channel name. You cannot activate or use an unassigned channel.

- 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.

> **Note** When SIP-based remote connections fail, the PMC displays a visual indicator in the form of a yellow triangle next to the channel. For more information, see the "Identifying Channel Activation Issues" section on page 8-23.

- To connect your 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.) If the PMC cannot establish connectivity to the RMS, PMC users may experience channel activation issues (such as fast busy) when they attempt to use a SIP-based remote connection.

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

For more information about the Channels menu, see the "Configuring the Channels and Advanced Settings" section on page 5-7. For more information about troubleshooting the RMS, see the "Troubleshooting PMC Connectivity Issues with the RMS" section on page 8-21.

Related Topics

- Configuring the PMC Skins, page 5-2
- Skin Caveats, page 5-4

Logging Out of the PMC Application

You can log out of the PMC application in either of the following ways:

- Click the **Menu** button; then, click **Exit**.
- Right-click in the PMC interface; then, from the PMC menu, click **Exit**.
- Click the "**X**" that is located at the top right corner of the PMC to close the application.

Where to Find More Information

- *Cisco IPICS Server Administration Guide*