Performing Cisco IPICS Dispatcher Tasks

A Cisco IPICS dispatcher is responsible for setting up virtual talk groups (VTGs), activating VTGs to begin conferences, and adding or removing members or participants in inactive and active VTGs. A dispatcher also monitors active VTGs, notifies participants about active VTGs, and can mute and unmute PMC users, as necessary.

In addition, a dispatcher manages policies, each of which activates a VTG at a particular time and deactivates it after a designated interval. Policy management activities are performed in the Policy Engine tab of the Cisco IPICS Administration Console. For more information about the policy engine, see Chapter 8, "Configuring and Managing the Cisco IPICS Policy Engine," and Chapter 7, "Using the Cisco IPICS Policy Engine."

Note Only a dispatcher or an operator who belongs to a specific ops view should create, edit, or delete policies that are associated with that ops view. A dispatcher or operator who modifies a policy that belongs to another ops view could cause inconsistencies when users view policies. For more information, see Chapter 7, "Using the Cisco IPICS Policy Engine," and Chapter 8, "Configuring and Managing the Cisco IPICS Policy Engine."

You perform the Cisco IPICS dispatcher activities from the Virtual Talk Groups window in the Administration Console. To access this window, log in to the Administration Console as described in the "Accessing the Administration Console" section on page 1-12. Navigate to **VTG Management > Virtual Talk Groups**.

> **Note** You must be assigned the dispatcher role to access the Virtual Talk Groups window.

> **Note** Cisco IPICS allows more than one dispatcher to log in to the system at a time. This situation requires coordination between dispatchers because the users, channels, or groups that are committed to a VTG by one dispatcher may be required by another. The Cisco IPICS operational views, also referred to as *ops views*, feature provides a way to handle this situation. With this feature, a dispatcher sees only the VTG participants that have been assigned to a particular ops view. For more information about ops views, see Chapter 6, "Configuring and Managing Cisco IPICS Operational Views."

Managing VTGs

A VTG enables multiple participants on various channels to communicate by using a single multicast address. Participants in a VTG can include users, user groups, channels, channel groups, and other VTGs. An active VTG, also called an *event*, is a VTG in which all the participants have live connections with each other.

You can stage a VTG by creating an inactive VTG. You use this VTG to arrange participants who can communicate when you activate it. You can create as many inactive VTGs as necessary and activate any of them when needed.

After you activate the VTG, you can easily manage it by adding and removing users, channels, and other VTGs, notifying and dialing out to VTG participants, and by muting and unmuting PMC users.

This chapter describes information about how to manage VTGs and includes the following sections:

You perform the VTG management tasks in the **VTG Management > Virtual Talk Groups** window. For more information about this window, including how to access it, see the "Understanding the Virtual Talk Groups Window" section on page 4-3.

For related information, see the "Best Practices for Managing VTGs" section on page 4-37.

Understanding the Virtual Talk Groups Window

As a Cisco IPICS dispatcher, you perform dispatcher tasks in the Virtual Talk Groups window. The Virtual Talk Groups window lists information about each of the VTGs that you have added in Cisco IPICS.

The bottom area of this window displays a list of Cisco IPICS VTGs and general information for each VTG. By default, this area displays all VTGs, but you can choose to display only VTGs that match search criteria that you specify in the top area of the window.

Note   You can specify the number of rows of VTGs that display per results page by choosing from the Rows per page drop-down list box at the top right of the window. To navigate between the results pages, click the arrows at the bottom of the window; then click **Go**.

Table 4-1 describes the fields in the Virtual Talk Groups window.

Table 4-1   Fields in the Virtual Talk Groups Window

Field	Description	Reference
Filter		
VTG Name field	This field enables search for only the VTG names that begin with the character string that you enter (characters are not case-sensitive).	To limit the display of VTGs or to display a certain VTG, enter the desired filter criteria in the filter field; then, click **Go**.
Go button	Click this button to display VTGs by the search criteria that you choose.	
Clear Filter button	Click this button to remove filter selections and display an empty list of VTGs.	
VTG Information		
VTG Name field	This field specifies a unique identification name that is assigned to the VTG.	See the "Managing Inactive VTGs" section on page 4-6
Status field	This field indicates whether a VTG is active or inactive.	See the "Managing Active VTGs" section on page 4-17
Prompt field	This field indicates whether a spoken name is recorded for the VTG. This prompt plays for a user when the user logs in to the Cisco IPICS telephony user interface. You can record the spoken name prompt for a user by clicking the **Not Recorded** or the **Recorded** link in the Prompt column. When you click a link in the Prompt column, the Spoken Names window displays.	See the "Managing Prompts" section on page 8-11
Add button	Click this button to add a new Cisco IPICS VTG.	See the "Adding a New VTG" section on page 4-9 and the "Modifying a VTG" section on page 4-13
Delete button	Click this button to delete a VTG.	See the "Deleting a VTG" section on page 4-16

Table 4-1   Fields in the Virtual Talk Groups Window

Field	Description	Reference
Change Status drop-down list box	Choose from this drop-down list box to activate or deactivate a VTG.	See the "Changing the Status of a VTG" section on page 4-18
Display Controls		
Rows per page drop-down list box	Specifies how many rows of VTGs are included in a VTGs list page.	See the "Navigating Item Lists" section on page 1-16
Page field	Displays VTGs on a specific page.	
|< (First page) button	Displays the first page of the VTG list.	
< (Previous page) button	Displays the previous page of the VTG list.	
> (Next page) button	Displays the next page of the VTG list.	
>| (Last page) button	Displays the last page of the VTG list.	

The individual VTG windows contain the following information tabs:

- **General** tab—This tab allows you to manage information about the VTG, such as VTG name, description, and VTG status.

- **PMC** tab—This tab allows you to set attributes for the PMC.

- **Participants** tab—This tab allows you to view available resources and current VTG participants, add and remove channels, users, and other VTGs from the VTG, activate and deactivate the VTG, and execute various activities within the active VTG. Activities that you can execute include notifying users, dialing out to specific VTG participants, and enabling/disabling PMC attributes.

When you disable users, and channels in Cisco IPICS, they get disconnected from any active VTGs but still display in the Participants tab of the active VTG, with a blue X and/or text status to the right of the user or channel. You can modify any attribute on a user or channel while it is disabled.

To access the Virtual Talk Groups window, log in to the Administration Console as described in the "Accessing the Administration Console" section on page 1-12, then navigate to **VTG Management > Virtual Talk Groups**.

Note   You must be assigned the dispatcher role to access the Virtual Talk Groups window.

For more information about managing inactive VTG and active VTGs, see the "Managing Inactive VTGs" section on page 4-6, and the "Managing Active VTGs" section on page 4-17.

Managing Inactive VTGs

An inactive VTG lets you create various arrangements of members (users, PTT channels, and VTGs), without committing network resources or affecting VTGs that are in progress. A dispatcher can activate a VTG at any time, which brings the VTG participants together into a live conference.

You can view information about any VTG by clicking the VTG name that displays in the Virtual Talk Groups window. Information about the VTG displays in a separate window.

When you modify an inactive VTG, no changes occur in system resources or in the communication between participants until you activate the VTG. When you make changes to an active VTG, the original attributes of the VTG remains unchanged.

The following sections describe information about managing inactive VTGs:

- Guidelines for Managing Inactive VTGs, page 4-7
- Adding a New VTG, page 4-9
- Modifying a VTG, page 4-13
- Deleting a VTG, page 4-16

You perform the VTG management tasks in the Administration Console Virtual Talk Groups window. For more information about this window, including how to access it, see the "Understanding the Virtual Talk Groups Window" section on page 4-3.

Guidelines for Managing Inactive VTGs

When you are managing VTGs, be sure to adhere to the following guidelines:

- A Cisco IPICS user can appear more than once in a list of VTG members. For example, the user could be added individually and as part of one or more user groups. When the VTG becomes active, Cisco IPICS recognizes such multiple appearances as a single user.

- If you drag a user, or channel into a VTG from the Users, Channels, or Radios lists and that user or channel already exists in a group within the VTG, the channel or user does not appear another time as an individual user or channel. If you drag a user or channel into a VTG individually; then, add a group that contains the user or channel, Cisco IPICS does display the user or channel in the group and individually.

- Cisco IPICS allows you to create blank VTGs, which are VTGs with no participants. You can activate a blank VTG; then, add participants to it.

- When adding VTGs to another VTG, each VTG that you add is called a sub-VTG. Activating the top-level VTG activates any sub-VTGs. Activating a sub-VTG does not activate the top-level VTG.

- You cannot make a VTG a participant of its own VTG or create a VTG that would result in a loop of VTGs. For example, if you place VTG-A into VTG-B, you cannot place VTG-B into VTG-A.

  Similarly, if VTG-A contains the sub-VTG-D and VTG-C contains the sub-VTG-D, you cannot add VTG-C to VTG-A.

  If you try to activate any channels or VTGs that, when activated, will cause an audio loop, Cisco IPICS detects this action and does not activate them. These channels or VTGs display crossed out in the VTG list.

- Mixing secure and non-secure channels in the same VTG is not recommended because users on non-secure channels will be able to hear users on secure channels.

- When you click a specific VTG from the VTG Management > Virtual Talk Groups window, the Participants information displays, from which you can view all available VTG resources that are configured in Cisco IPICS. For more information, see the "Adding a New VTG" section on page 4-9.

- To add a PTT channel, drag the channel name that you want to add from the Channels Resources area to the Participants area.

- To add a PTT channel group, drag the channel group name that you want to add from the Channels Resources area to the Participants area.

- To add a radio channel, drag the radio that you want to add from the Radios Resources area to the Participants area.

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Note To avoid audio loops, Cisco IPICS supports an active radio channel in only one VTG at a given time.

- To add a user, drag the user name that you want to add from the Users Resources area to the Participants area.

- To add a user group, drag the user group name that you want to add from the Users Resources area to the Participants area.

- To add a VTG, drag the VTG name that you want to add from the Resources area to the Participants area. (Adding a VTG to another VTG creates a *conference of conferences*.)

- To add a channel, user, or VTG that you searched for, drag the resource from the Resources area to the Participants area.

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Tip To expand a collapsed Channels, Channel Groups, Users, User Groups, or VTGs list, click the arrow to the left of the list.

After you complete the drag and drop operation and release the mouse button, the resource that you added to the inactive VTG displays in green until you click **Save** to commit the change. To remove an item that displays in green, drag it out of the Participants area and into the Resources area.

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Tip Be aware that you must click **Save** before you click the **Activate VTG** button to save your changes to the VTG. If you click **Activate VTG** before you click **Save**, you lose your changes and you must reenter them.

> **Note** Activation or deactivation of a VTG requires that the Cisco IPICS server communicate with the RMS. If you deactivate a VTG when the RMS is unavailable, the deactivation occurs in the Cisco IPICS database, but is not reflected in the RMS until the Cisco IPICS server resumes communications with the RMS.

- If you remove a PMC user from a VTG and that user monitors a channel that remains in the VTG, that user can continue to participate in the VTG through the channel that is associated to the user.

- If a user or a channel appears in a VTG more than once and you remove a single listing of the user or the channel, Cisco IPICS removes all instances of the user or the channel from the VTG.

- If you drag a user out of a user group in the Participants area, you do not change the actual user group.

- Empty PTT channel groups or user groups are not allowed in a VTG. If a group is included in a VTG and you drag every member out of the group, Cisco IPICS removes the group from the VTG.

- To add a channel or user, or VTG for which you searched, drag the resource from the Resources area to the Participants area.

> **Note** Mixing secure and non-secure channels in the same VTG is not recommended because users on non-secure channels are able to hear users on secure channels.

Adding a New VTG

When you add a VTG , you specify the name of the VTG and, typically, designate the members who are participants in the VTG. You can activate the VTG at any time after you save it.

Note Activation or deactivation of a VTG requires that the Cisco IPICS server communicate with the RMS. If you deactivate a VTG when the RMS is unavailable, the deactivation occurs in the Cisco IPICS database, but is not reflected in the RMS until the Cisco IPICS server resumes communications with the RMS.

To add a new VTG, perform the following procedure:

Procedure

Step 1 Navigate to **VTG Management > Virtual Talk Groups**.

Step 2 Click **Add**.

Step 3 In the VTG Name field, enter a name for the VTG.

The name can include alphanumeric characters, spaces, and any of these characters: . , – ' # ( ) / : ,.

Step 4 In the Description field, enter a description for this VTG.

Step 5 You can view the status of the VTG in the Status field.

Step 6 To set the PMC attributes, click the **PMC** tab.

For information about how some attributes behave with associations, see the "Understanding Association Attribute Behaviors" section on page 2-22.

Step 7 From the RX Mute During PTT drop-down list box, choose one of the following values:

- **VTG**—When PTT is engaged, RX (receive transmission) is muted on VTGs.
- **None**—When PTT is engaged, no channels are muted.
- **All**—When PTT is engaged, RX is muted on all channels/VTGs.

Step 8 To enable Voice Activity Detection (VAD) on the PMC, check the **Enable VAD** check box.

When VAD is enabled, the PMC only sends voice traffic when it detects voice activity.

When set to true (attribute check box is checked) on the channel/VTG, VAD is used by the PMC while communicating with the channel/VTG.

By default, this attribute is set to false (attribute check box is not checked).

Step 9   To enable latch, check the **Allow Latch** check box.

The latch functionality allows a Cisco IPICS user to lock in a PTT channel.

> **Note**   When Allow Latch is set to true (attribute check box is checked) on a
> channel/VTG, the user can use latch on any channel/VTG or user/VTG
> association.

By default, this attribute is set to false (attribute check box is unchecked).

> **Note**   If your Cisco IPICS server is running release 2.0(2) and you upgrade to
> release 2.1(1), any existing channels and VTGs maintain their values for
> latch, even if set to true.

Step 10   To enable Listen Only, check the **Listen Only** check box.

When set to true (attribute check box is checked), the user can listen only on a
channel; transmission is not allowed. This attribute applies to the PMC,
IP phones, and dialed-in users.

> **Note**   If a VTG contains only channels and no users, enabling Listen Only on
> the PMC has no effect. However if the VTG contains users, enabling
> Listen Only dims the PTT button on the PMC but the channels in the PMC
> are not set to Listen Only.

Step 11   To uniquely identify VTGs by a specific color that displays on the PMC, choose
a color from the VTG color drop-down list box.

Step 12   To assign a PMC region to the VTG, choose a region from the VTG PMC Region
drop-down list box.

Step 13   To add participants to the VTG, click the **Participants** tab.

Step 14   To view the available resources that are configured in Cisco IPICS and which can
be added as participants in this VTG, choose one of the following options from
the View drop-down list box that displays in the Resources area:

Note   If there are less than 100 users, channels, or VTGs configured in
Cisco IPICS, those resources display in the drop-down list box. If there
are more than 100 resources configured, you must use the Search utility
to display them. For more information about the search functionality, see
the "Using the Search Utility" section on page 4-34.

- **Channels**—Choose this option to view the available channels that are
  configured in Cisco IPICS.

- **Channel Groups**—Choose this option to view the available channel groups
  that are configured in Cisco IPICS.

Note   When you choose **Channel Groups** from the drop-down list box, the
Search button displays as dimmed and the search functionality becomes
unavailable.

- **Radios**—Choose this option to view the available radios that are configured
  in Cisco IPICS.

- **Users**—Choose this option to view the available users who are configured in
  Cisco IPICS.

- **User Groups**—Choose this option to view the available user groups that are
  configured in Cisco IPICS.

Note   When you choose **User Groups** from the drop-down list box, the Search
button displays as dimmed and the search functionality becomes
unavailable.

- **Virtual Talk Groups**—Choose this option to view the available VTGs that
  are configured in Cisco IPICS.

Step 15   Add any number and any combination of these resources to the VTG as described
in the "Guidelines for Managing Inactive VTGs" section on page 4-7.

Tip   To expand a collapsed Channels, Channel Groups, Users, User Groups, or
VTGs list, click the arrow to the left of the list.

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> **Note** Be aware that you must click **Save** before you click the **Activate VTG** button to save your changes to the VTG. If you click **Activate VTG** before you click **Save**, you lose your changes and you must reenter them.

Step 16 Click **Save** to add the VTG without exiting the current window.

If you do not want to save your changes, click **Cancel**.

Step 17 To activate the VTG from this window, click **Activate VTG**.

Modifying a VTG

When you modify a VTG, you can change its name and add or remove participants.

Because an inactive VTG is not an active event, you can make any changes to it without affecting any current communication between users.

To modify a VTG, perform the following procedure:

Procedure

Step 1 From the Administration Console, navigate to **VTG Management > Virtual Talk Groups**.

Step 2 In the VTG Name column, click the name of the VTG that you want to modify.

Step 3 If you want to change the name of the VTG, click the **General** tab and enter the new name in the **VTG Name** field.

The name can include alphanumeric characters, spaces, and any of these characters: . , – ' # ( ) / : ,.

Step 4 To set the PMC attributes, click the **PMC** tab.

For information about how some attributes behave with associations, see the "Understanding Association Attribute Behaviors" section on page 2-22.

Step 5 From the RX Mute During PTT drop-down list box, choose one of the following values:

- **VTG**—When PTT is engaged, RX (receive transmission) is muted on VTGs.

- **None**—When PTT is engaged, no channels are muted.

- **All**—When PTT is engaged, RX is muted on all channels/VTGs.

Step 6   To enable Voice Activity Detection (VAD) on the PMC, check the **Enable VAD** check box.

When VAD is enabled, the PMC only sends voice traffic when it detects voice activity.

When set to true (attribute check box is checked) on the channel/VTG, VAD is used by the PMC while communicating with the channel/VTG.

By default, this attribute is set to false (attribute check box is not checked).

Step 7   To enable latch, check the **Allow Latch** check box.

The latch functionality allows a Cisco IPICS user to lock in a channel.

> **Note**   When Allow Latch is set to true (attribute check box is checked) on a channel/VTG, the user can use latch on any channel/VTG or user/VTG association.

By default, this attribute is set to false (attribute check box is unchecked).

> **Note**   If your Cisco IPICS server is running release 2.0(2) and you upgrade to release 2.1(1), any existing channels and VTGs maintain their values for latch, even if set to true.

Step 8   To enable Listen Only, check the **Listen Only** check box.

When set to true (attribute check box is checked), the user can listen only on a channel; transmission is not allowed. This attribute applies to the PMC, IP phones, and dialed-in users.

> **Note**   When you enable a VTG that contains only channels and no users, enabling Listen Only on the PMC has no effect. If the VTG contains users and you enable Listen Only, the PTT button dims on the PMC but the channels in the PMC are not set to Listen Only.

Step 9   To uniquely identify VTGs by a specific color that displays on the PMC, choose a color from the VTG color drop-down list box.

Step 10   To assign a PMC region to the VTG, choose a region from the VTG PMC Region drop-down list box.

Step 11   To view the available resources that are configured in Cisco IPICS and which can be added as participants in the VTG, click the **Participants** tab.

Step 12   From the View drop-down list box in the Resources area, choose from the following criteria:

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>
> **Note**   If there are less than 100 users, channels, or VTGs configured in Cisco IPICS, then those resources will display in the drop-down list box. If there are more than 100 resources configured, you must use the Search utility to display them. See the "Using the Search Utility" section on page 4-34 for more information.

- **Channels**—Choose this option to view the available channels and channel groups that are configured in Cisco IPICS.

- **Channel Groups**—Choose this option to view the available channel groups that are configured in Cisco IPICS.

- **Radios**—Choose this option to view the available radios that are configured in Cisco IPICS.

- **Users**—Choose this option to view the available users who are configured in Cisco IPICS.

- **User Groups**—Choose this option to view the available user groups that are configured in Cisco IPICS.

- **Virtual Talk Groups**—Choose this option to view the available VTGs that are configured in Cisco IPICS.

Step 13   To add participants to the VTG after choosing the view in Step 12, see the "Guidelines for Managing Inactive VTGs" section on page 4-7.

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> **Tip**   To expand a collapsed Channels, Channel Groups, Users, User Groups, or VTGs list, click the arrow to the left of the list.

Step 14   Click **Save** to modify the VTG without exiting the current window.

If you do not want to save your changes, click **Cancel**.

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Note   Be aware that you must click **Save** before you click the **Activate VTG** button to save your changes to the VTG. If you click **Activate VTG** before clicking **Save**, you lose your changes and you must reenter them.

Step 15   To activate a VTG in this window, click **Activate VTG**.

Deleting a VTG

If a VTG is no longer needed, you can delete it from Cisco IPICS. Deleting an inactive VTG has no effect on the participants within it.

You cannot delete a VTG that is associated with an active VTG. To delete such a VTG, you must first deactivate the active VTG. See the "Reactivating a VTG" section on page 4-32 or the "Using the Search Utility" section on page 4-34 for more information.

To delete one or more VTGs, perform the following procedure:

Procedure

Step 1   From the VTG Management drawer in the Cisco IPICS Administration Console, click **Virtual Talk Groups**.

Step 2   Check the check box next to each VTG that you want to delete.

Step 3   Click **Delete**.

A dialog box prompts you to confirm the deletion.

Step 4   To confirm the deletion, click **OK**.

If you do not want to delete the VTG or VTGs, click **Cancel**.

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Tip   To simultaneously delete all the VTGs that are configured in Cisco IPICS, check the check box at the top of the Virtual Talk Groups list; then click **Delete**.

Managing Active VTGs

:The following sections describe information about managing active VTGs:

Guidelines for Managing Active VTGs

When you are managing active VTGs , be sure to adhere to the following guidelines:

- When channels that are associated with an active VTG get disabled, the channel gets disconnected from the VTG but still displays with a blue X and/or text status next to it, in the Participants tab in the Virtual Talk Groups window for that particular active VTG.

- When a disabled user or channel gets deleted, it gets removed from the affected VTGs.

- When a user group or channel group gets deleted, the group and its members (channels and users) get removed from the affected VTGs.

- If a user gets removed from a user group, the change automatically propagates to any VTG to which the user group is associated and the user gets disconnected and removed from the affected VTGs. It is no longer visible in the user group list.

- When a disabled user gets enabled again, the user automatically connects to the affected VTGs. If the user is connected via a SIP-based connection, the appropriate RMS resources get allocated to support those connections.

- If a channel gets removed from a channel group, the change automatically propagates to any VTG to which the channel group is associated and the channel gets disconnected from the affected VTGs. It is no longer visible in the channel group list.

- When a disabled channel gets enabled again, the channel does not automatically connect in the affected VTGs. A notification message displays on that particular VTG to reactivate the VTG if the channel gets enabled again. You must reactivate the affected VTGs for the channel to connect and join the VTGs.

- If a user gets added to a user group, or a channel gets added to a channel group, no action is taken in the affected VTGs. In order to update the VTG with the changes to the user group or channel group, you must drag the user group or channel group back into the VTG. The user or channel that was added to the user or channel group gets connected to the VTG when the changes are saved.

- Users and channels that are members of a user group or channel group can also be directly associated with VTGs. In this case, the state of the directly associated users and channels override the states of the member users and member channels. For example, if a channel is directly connected to a VTG and is also a member of a channel group, modifications to the channel group do not affect the connection status of the channel in the VTG.

- You cannot delete an active VTG. You must deactivate it first.

- A channel can be a participant in one active VTG at a time. If you try to add a channel that is in an active VTG to a another active VTG, or try to activate another VTG that has the channel in it, Cisco IPICS shows the channel as unavailable in the second VTG.

- If the Cisco IPICS server fails, all active VTGs continue without disruption; however, you can no longer make changes to the VTG or mute a user.

- When you are connected via a high latency, low bandwidth connection, allow 1.5 minutes for every three channel/VTG activations.

Changing the Status of a VTG

A VTG can have either of the following statuses:

- Activated—Participants in a VTG can communicate with each other.

- Deactivated—Channels in a VTG are no longer connected and participants in a VTG can no longer communicate with each other.

You can change the status of a single VTG, or you can change the status of several VTGs at one time.

Activating a VTG causes Cisco IPICS to commit the network resources that are required to enable VTG participants to communicate with each other.

Note   Activating or deactivating a VTG requires that the Cisco IPICS server communicate with the RMS. When you deactivate a VTG when the RMS is unavailable, the deactivation occurs in the Cisco IPICS database, but is not reflected in the RMS until the Cisco IPICS server resumes communications with the RMS.

A VTG can also be activated by a policy. For more information, see the Chapter 7, "Using the Cisco IPICS Policy Engine."

When you activate a VTG, it attempts to obtain a multicast address from the multicast pool. If it is successful, it attempts to acquire resources for each of its channels and sub-VTGs. (Channels go into the pending state during this process.) If the VTG successfully obtains a multicast address and some resources, it becomes active; otherwise, it does not activate.

Note   When you activate a VTG, there may be a delay before users can communicate with each other, especially if the VTG contains many channels, users, and other VTGs. The delay may range from a few seconds to more than one minute, depending on the number of participants in the VTG.

When you deactivate a VTG, the channels in the VTG are no longer connected to each other. You can deactivate a VTG at any time.

A VTG can also be activated by a policy. For more information, see the Chapter 7, "Using the Cisco IPICS Policy Engine."

To determine the current status of VTGs, access the VTG Management drawer, click **Virtual Talk Groups**, and look at the information in the Status column for the VTG.

To change the status of a VTG, perform the following procedure:

Procedure

Step 1   From the Administration Console, navigate to **VTG Management > Virtual Talk Groups**.

Step 2   Take either of the following actions:

- In the VTG Name column, click the VTG name to display the VTG

    – To activate or deactivate the VTG, click **Activate VTG** or **Deactivate VTG**; then click **Save**.

    The **Activate VTG** or **Deactivate VTG** button appears at the bottom of the VTG management window. The name of the button depends on the current status of the VTG.

- Check the check box next to each VTG that you want to change; then choose the desired action (**Activate** or **Deactivate**) from the Change Status drop-down list box.

Adding Participants to and Removing Participants from an Active VTG

You can add participants to or remove participants from an active VTG.

When you add participants to an active VTG, Cisco IPICS does not commit network resources to the VTG until you click **Save**. At that point, Cisco IPICS commits the necessary resources to enable the existing VTG participants to communicate with those that you added.

Changes that you make to an active VTG do not affect the VTG and are not saved to it when you deactivate the VTG.

Note   There typically is a delay of several seconds for changes to take effect after you save them. Therefore, a user who is added to an active VTG may not be able to hear or communicate immediately, and a user who is removed from an active VTG may be able to continue participating in the VTG for a short time.

A user who is added to an active VTG is affected as follows:

- A PMC user sees a new PTT channel button that represents the VTG

- A handheld radio user on an LMR network hears new voices on the radio channel

- A Cisco Unified IP Phone user sees a new selection in the Services > IPICS menu on the phone that represents the VTG

To add participants to or remove participants from an active VTG, perform the following procedure:

Procedure

Step 1   From the VTG Management drawer in the Cisco IPICS Administration Console, click **Virtual Talk Groups**.

Step 2   Click the link of the active VTG to which you want to add or remove participants.

Step 3   To add participants to, or remove from the active VTG, click the **Participants** tab.

Step 4   To view the available resources that are configured in Cisco IPICS that can be added as participants in this active VTG, from the View drop-down list box in the Resources area, choose from the following criteria:

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> **Note**   If there are less than 100 users, channels, or VTGs configured in Cisco IPICS, then those resources will display in the drop-down list box. If there are more than 100 resources configured, you must use the Search utility to display them. For more information about the search functionality, see the "Using the Search Utility" section on page 4-34.

- **Channels**—Choose this option to view the available channels and channel groups that are configured in Cisco IPICS.

- **Channel Groups**—Choose this option to view the available channel groups that are configured in Cisco IPICS.

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> **Note**   When you choose **Channel Groups** from the drop-down list box, the Search button displays as dimmed and the search functionality becomes unavailable.

- **Radios**—Choose this option to view the available radios that are configured in Cisco IPICS.

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Note   To avoid audio loops, a radio can be active in only one VTG at a given time.

- **Users**—Choose this option to view the available users who are configured in Cisco IPICS.

- **User Groups**—Choose this option to view the available user groups that are configured in Cisco IPICS.

✎

Note   When you choose **User Groups** from the drop-down list box, the Search button displays as dimmed and the search functionality becomes unavailable.

- **Virtual Talk Groups**—Choose this option to view the available VTGs that are configured in Cisco IPICS.

Step 5   To add participants to the VTG, after choosing the view in Step 4, see the "Guidelines for Managing Inactive VTGs" section on page 4-7.

Step 6   If you want to remove participants from the VTG, drag each participant outside of the Participants area.

After you complete the drag and drop operation and release the mouse button, the participant changes to red. It is permanently removed from the VTG after you click **Save**. The participant can continue participating in the VTG until you click **Save**.

Step 7   To finalize your modifications, click **Save**.

If you want to cancel your changes, click **Cancel**.

Step 8   To notify or dial out to VTG participants, or to modify their PMC attributes, perform the steps in the "Notifying and Dialing Out to Participants, and Setting PMC Attributes in an Active VTG" section on page 4-28.

Muting or Unmuting a PMC User in an Active VTG

Cisco IPICS allows you to mute a PMC user in an active VTG or in all VTGs in which the user is a participant, and to unmute any muted user. This feature can be useful if a user is participating from a noisy location, or if you want to mute a user for any other reason.

You can choose how to mute a PMC user as follows:

- Allow the user to listen to the VTG but not to speak in it

- Do not allow the user to speak or listen to the VTG

- Allow the user to listen to any channel or VTG, but not to speak

- Do not allow the user to speak or listen to any channel or VTG

The mute feature affects PMC, IP phone, and dialed users. In the case of an IP phone user, if the user is already transmitting on a VTG or PTT channel, the microphone does not get muted during that transmission. In addition, because all the user transmissions in a PTT channel are mixed into a single signal, it is not possible to mute the microphone of a LMR user in a PTT channel.

Note   Users, channels, and VTGs may have attributes that control their behavior. In some cases, resources may have the same behavior attributes so when you associate users to VTGs and modify the attributes for users, the system determines the resulting behavior by the attribute configuration for each associated resource. Cisco IPICS allows you to override the resulting behaviors for specific associations. When you modify user attributes that are part of an association, the resulting behavior depends on attribute settings for those users in the association. See the "Understanding Association Attribute Behaviors" section on page 2-22 for more information about modifying attributes that are part of an association.

To mute or unmute a user in an active VTG, perform the following procedure:

Procedure

Step 1   From the Administration Console, navigate to **VTG Management > Virtual Talk Groups**.

Step 2   Click the link of the active VTG that contains the user that you want to mute or unmute.

Step 3   Click the **Participants** tab.

> ✎
> **Note**   If necessary, click the arrow next to a user group in the Active VTG
> Details area to expand the group so that you can see an individual user.

You can mute and unmute users in either the User Details window, or in the
Virtual Talk Groups window of the active VTG.

Step 4   To mute a user in the User Details window, double-click the user who you want
to mute from either the **Participants** area or the **Resources** area; then, take one
of the following actions in the User Details window:

> ✎
> **Note**   If you choose a user from the **Resources** area (users who are not
> participants of the active VTG), changes to the attributes in the User
> Details window result in the same behavior as when attributes are
> modified in the Users window, PMC tab, and have no effect on the VTG.
> If you choose users who are participants of the VTG, changing attributes
> in the User Details window result in the attributes taking on the values of
> the user-VTG association and only apply to the VTG. See the
> "Understanding Association Attribute Behaviors" section on page 2-22
> for more information about association attributes.

- Check the **Listen Only** check box to allow the user to listen to the active VTG
  but not to speak; then, click **Save**.

  In the Virtual Talk Groups window of the active VTG, an icon displays next
  to the name of the user showing that the PMC microphone has been muted.
  This attribute applies to the PMC, IP phones, and dialed-in users.

- Check the **Disable Audio** check box to disallow the user from listening or
  speaking in the active VTG; then, click **Save**.

  This setting disables the user in this VTG. In the Virtual Talk Groups window
  of the active VTG, an icon displays next to the name of the user showing that
  the PMC speaker has been muted. This attribute applies to the PMC,
  IP phones, and dialed-in users.

✎

Note   Be aware that when you choose the Disable Audio feature from any location in the Cisco IPICS server, the audio on all end user devices (PMC, IP phones, dialed-in users), except for radios, is disabled.

Step 5   To mute a user in the Participants area of the Virtual Talk Groups window, check the check box next to the name of the user that you want to mute; then, take any of the following actions:

   • From the drop-down list box at the bottom of the Participants area, choose **Set Listen Only** to allow the user to listen to the active VTG but not to speak; then, click **Execute**.

      An icon displays next to the name of the user showing that the PMC microphone has been muted. This attribute applies to the PMC, IP phones, and dialed-in users.

   • From the drop-down list box at the bottom of the Participants area, choose **Disable Audio** to disallow the user from listening or speaking in the active VTG, then, click **Execute**.

✎

Note   Be aware that when you choose the Disable Audio feature from any location in the Cisco IPICS server, the audio on all end user devices (PMC, IP phones, dialed-in users), except for radios, is disabled.

      This setting disables the user in this VTG. An icon displays next to the name of the user showing that the PMC speaker has been muted.

Step 6   To unmute a user in the User Details window, double-click the user that you want to unmute, from either the **Participants** area or the **Resources** area, and take one of the following actions in the User Details window:

   • Uncheck the **Listen Only** check box to allow the user to speak and to listen to the active VTG; then, click **Save**.

      The icon next to the user name disappears in the Virtual Talk Groups window. This attribute applies to the PMC, IP phones, and dialed-in users.

   • Uncheck the **Disable Audio** check box to allow the user to speak and to listen to the active VTG; then, click **Save**.

      The user is enabled and the icon next to the user name disappears in the Virtual Talk Groups window.

- Click **Close** to exit the User Details window.

Step 7 To unmute a user in the Participants area of the Virtual Talk Groups window, check the check box of the user that you want to unmute and take any of the following actions:

- From the drop-down list box at the bottom of the Participants area, choose **Unset Listen Only** to allow the user to listen and to speak in the active VTG; then, click **Execute**.

  The icon next to the user name disappears.

- From the drop-down list box at the bottom of the Participants area, choose **Enable Audio** to allow the user to speak and to listen in the active VTG; then, **Execute**.

  This setting enables the user in this VTG and the icon next to the name of the user disappears.

For information about how to enable or disable the Latch feature in the User Details window, see the "Enabling or Disabling the Latch Feature in the User Details Window" section on page 4-26.

Enabling or Disabling the Latch Feature in the User Details Window

Cisco IPICS lets you enable or disable the latch feature for a PMC user in the User Details window. The latch feature can be useful if a user wants to lock in a channel or talk on multiple channels at the same time.

Changes to PMC attributes vary depending on the location from which you access the User Details window. For example, if you open the User Details window for a user who is a participant of an active VTG, changes to the attributes for that user result in different behaviors, according to the user-VTG association values. If you modify attributes for a user who is not a participant of an active VTG (a user in the **Resources** area of the Virtual Talk Groups window), only the user is affected and not the VTG.

✎
Note   Users, channels, and VTGs may have attributes that control their behavior. In some cases, resources may have the same behavior attributes. When you associate users to VTGs and modify the attributes for users, the system determines the resulting behavior by how the attributes are configured for each associated

resource. Cisco IPICS allows you to override the resulting behaviors for specific associations. When you modify user attributes that are part of an association, the resulting behavior depends on the attribute settings for those users in the association. See the "Understanding Association Attribute Behaviors" section on page 2-22 for more information about modifying attributes that are part of an association.

To enable or disable the latch feature for a PMC user, perform the following procedure:

Procedure

Step 1   From the Administration Console, navigate to **VTG Management > Virtual Talk Groups**.

Step 2   Click the link of the active VTG that contains the user for whom you want to enable or disable the latch feature.

Step 3   Click the **Participants** tab.

> **Note**   If necessary, click the arrow next to a user group in the Active VTG Details area to expand the group so that you can see an individual user.

Step 4   To enable latch for a user in the User Details window, double-click the user for whom you want to enable latch from either the **Participants** area or the **Resources** area.

> **Note**   If you choose a user from the **Resources** area (users who are not participants of the active VTG), changes to the attributes in the User Details window result in the same behavior as when attributes are modified in the Users window, PMC tab, and have no effect on the VTG. If you choose users who are participants of the VTG, changing attributes in the User Details window results in the attributes taking on the values of the user-VTG association and only applies to the VTG. See the "Understanding Association Attribute Behaviors" section on page 2-22 for more information about association attributes.

Step 5   Check the **Allow Latch** check box.

Step 6 Click **Save**.

Step 7 To disable the latch feature for a PMC user in the User Details window, double-click the user for whom you want to disable latch, from either the **Participants** area or the **Resources** area.

Step 8 Uncheck the **Allow Latch** check box.

Step 9 Click **Save**.

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> **Note** When you modify user attributes that are part of an association, the resulting behavior depends on attribute settings for those users in the association. See the "Understanding Association Attribute Behaviors" section on page 2-22 for more information about modifying attributes that are part of an association.

Step 10 Click **Close** to exit the User Details window.

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> **Note** To enable or disable latch for a user in the **Participants** area of the Virtual Talk Groups window, see the "Notifying and Dialing Out to Participants, and Setting PMC Attributes in an Active VTG" section on page 4-28.

Notifying and Dialing Out to Participants, and Setting PMC Attributes in an Active VTG

You can initiate various actions in an active VTG, including notifying participants via e-mail, Short Message Service (SMS), or pager, dialing out to participants who are connected via the Public Switched Telephone Network (PSTN) or IP phone, displaying a designated message on supported Cisco Unified IP Phone models, and enabling and disabling PMC attributes for selected VTG participants.

When Cisco IPICS operators initially create users, they set up a user profile in which the users can enter and manage personal information, including communication preferences. The users have the option to enter and edit notification preferences that include their e-mail addresses and dial preferences that include an ordered list of phone numbers to be used when you initiate a dial-out to given users.

Note   In the user profile, users can specify their SMS and pager contact information in the form of e-mail addresses. When a notification gets sent to these e-mail addresses (provided by their SMS/pager providers), a text message or page is sent.

When you initiate a notification action, the policy engine automatically sends the users an e-mail that is directed to their e-mail account, SMS or pager, a designated message on supported Cisco Unified IP Phone models, or a pre-recorded prompt that plays to all participants in the selected VTG. The policy engine obtains the contact information of the participants from the notification preferences that were configured in their user profiles. See the Chapter 7, "Using the Cisco IPICS Policy Engine," for more information about the policy engine and configuring notification actions.

Note   If the Dial after sending notifications check box is checked in the Communications tab of the user profile, then Cisco IPICS will first send all e-mail notifications; then, attempt to place a call to the participants by using the dial preferences that were set in the user profile.

You can create notifications for users who are not configured in Cisco IPICS. For more information, see Appendix C, "Using Cisco IPICS for External Notifications."

When you initiate a dial-out to selected participants, Cisco IPICS attempts to call the participants by using the numbers that are specified in their individual dial preferences and begins with the first number in the list. If the call is successful, Cisco IPICS connects the call to the active VTG and stops. If the call is unsuccessful, Cisco IPICS continues to place calls to numbers in the order that they appear in the dial preferences list until a call is successful or until all of the numbers in the list have been tried.

If the dial-out action successfully completes, the participant can log in to Cisco IPICS. When you refresh the active VTG window, a PSTN (telephone) icon displays for each successful dial-out participant. An error icon displays for those participants for whom the dial-out was unsuccessful.

Cisco IPICS displays the method by which the participants are connected, (for example, by PSTN or PMC) and also displays the call progress (connecting, connected, call failed) when you initiate a dial-out to participants who are connected via the PSTN.

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> **Note**   The connection method and call progress indicators only update when you refresh the window.

You can also set and modify PMC attributes for selected VTG participants. You execute these actions in the VTG window of the active VTG.

To initiate actions in an active VTG, perform the following procedure:

Procedure

Step 1   From the Administration Console, navigate to the **VTG Management > Virtual Talk Groups** window.

Step 2   Click the link of the active VTG for which you want to initiate actions.

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> **Note**   To activate a VTG in Cisco IPICS, see the "Changing the Status of a VTG" section on page 4-18.

Step 3   From the View drop-down list box in the Participants pane, choose one of the following options:

- **All**—Choose this option to view all of the participants (channels, users, and other VTGs) in this VTG.

- **Channels**—Choose this option to view the channels that are participating in this VTG.

- **Radios**—Choose this option to view the radios that participate in this VTG.

- **Users**—Choose this option to view the users who participate in this VTG. The window displays an icon next to each participant to indicate how the user is connected (via PMC, phone, or channel) to the VTG.

- **Virtual Talk Groups**—Choose this option to view the other VTGs that participate in the VTG.

Step 4   To choose the participants who you want to include in a particular action, check the check boxes next to the names of the participants.

Note   For example, if you want to dial out to users who are connected via a phone to invite them to join this active VTG, check the check boxes next to the names of those users.

Step 5   From the drop-down list box, choose any of the following actions:

Note   If you have limited call resources, you should choose the Notify Participants option rather than Dial Participants.

- **Notify Participants**—Choose this option to invite VTG participants, via e-mail or designated message, to join an active VTG and take either of the following actions:

    - To modify the subject of the message, in the Subject field, enter the text that you want to display in the subject line of the notification message.

    - To modify the body of the message, in the Body field, enter the message text that you want to display in the body of the notification message.

        Notification is sent via e-mail message, SMS text message, page, or designated message on supported Cisco Unified IP Phone models. Cisco IPICS obtains the e-mail addresses, telephone numbers, and delivery options from the communication preferences information that the users and/or Cisco IPICS operators entered in the user profiles.

    Note   A Cisco Unified IP Phone Text Notification action requires that you configure parameters in the Cisco Unified Communications Manager for IP Phone Notifications area in the SIP Configuration menu. For instructions, see the "Configuring SIP" section on page 8-35.

- **Dial Participants**—Choose this option to dial out to selected participants to invite them to join an active VTG. When you choose participants for dial out, the policy engine uses the dial preferences information (for example, phone numbers) that the users and/or Cisco IPICS operators have entered in their user profiles to determine the number(s) to be called and dials the participants.

- **Allow Latch**—Choose this option to enable the latch functionality, during this VTG, for selected participants. When you choose this action, participants that you choose will be able to lock in channels.

- **Disallow Latch**—Choose this option to disable the latch functionality, during this VTG, for selected participants. When you choose this action, the participants that you choose will not be able to lock channels.

- **Set Listen Only**—Choose this option to enable the Listen Only attribute, during this VTG, for selected participants. When you choose this action, participants that you choose in this VTG will only be able to listen (receive) and not to speak (transmit). This attribute applies to the PMC, IP phones, and dialed-in users.

- **Unset Listen Only**—Choose this option to disable the Listen Only attribute, during this VTG, for selected participants. When you choose this action, participants that you choose in this VTG will be able to speak (transmit).

- **Enable Audio**—Choose this option to enable audio, during this VTG, for selected participants. When you choose this action, participants that you choose in this VTG will have audio.

- **Disable Audio**—Choose this option to disable audio, during this VTG, for selected participants. When you choose this action, participants that you choose in this VTG will not have audio.

> ✎
> **Note**   Be aware that when you choose the Disable Audio feature from any location in the Cisco IPICS server, the audio on all end user devices (PMC, IP phones, dialed-in users), except for radios, is disabled.

Step 6   Click **Execute**.

Cisco IPICS executes the specified action(s).

Reactivating a VTG

If all channels are not available for a VTG when you activate it, Cisco IPICS activates the channels that are available. A channel may be unavailable because there are insufficient router resources available for it or because it is in use by another active VTG.

A blue X displays to the right of an unavailable VTG channel in the Active VTG Details area. To see why the channel is unavailable, hold the mouse over the X and look at the tooltip that pops up.

When a VTG channel is unavailable, Cisco IPICS allows the VTG to continue operating without the channel, and allows you take the necessary action to obtain the unavailable channel and reactivate the VTG. When you reactivate a VTG, Cisco IPICS determines whether previously unavailable channels are available and adds them to the active VTG if they are. In this way, Cisco IPICS ensures that you do not have to disrupt a VTG if some channels are not available when you activate the VTG.

To reactivate a VTG, perform the following procedure:

Procedure

Step 1   From the Administration Console, navigate to **VTG Management > Virtual Talk Groups**.

Step 2   In the VTG Name column, click the VTG that you want to activate.

Step 3   Make a note of which channels in the VTG are unavailable and why.

Cisco IPICS displays a blue X next to each unavailable channel in the Participants area. Hold the mouse cursor over the blue X to see why the channel is unavailable.

Step 4   If the channel is unavailable because of insufficient router resources, take these actions to free additional router resources:

- Remove channels from any VTG

- Disable users who have active SIP unicast connections

> **Note**   You can see how router resources are being used by looking at information about its loopbacks in the RMS window. For more information, see the "Viewing Detailed Information about a Loopback" section on page 2-101.

Step 5   If the channel is unavailable because it is in use by another VTG, take the following actions:

   a.   In the Configuration drawer, click **Channels**.

    b. In the Channels list, click the channel name link or check the check box next to the channel name.

    c. Click the **Associations** button.

    d. Click the **Virtual Talk Groups** tab.

    e. Locate the active VTG that is listed in the Virtual Talk Groups list; then, navigate to **VTG Management > Virtual Talk Groups**.

    f. Choose the active VTG that was listed in the Virtual Talk Groups tab of the Channels window.

    g. In the VTG Management drawer, click **Virtual Talk Groups** again.

    h. Click the link of another active VTG in the Virtual Talk Groups list and see if the channel is a participant in that VTG.

    i. Repeat as necessary until you locate the VTG in which the channel is a participant.

Step 6 Remove the channel from one of the active VTGs by dragging the channel out of the Participants area; then, clicking **Save**.

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> **Note** Make sure that the channel is not needed in this active VTG before you perform this step.

Step 7 In the VTG Management drawer, click the name of the original VTG in which the channel is shown as unavailable.

Step 8 If the VTG contains other unavailable resources, repeat Step 4 through Step 6.

Step 9 Click **Reactivate VTG**.

Using the Search Utility

You can search for a PTT Channel, radio channel, user, or VTG by using the search utility. The search utility is located in the Virtual Talk Groups window of each individual VTG.

When you complete a search, you can see the results display in the Resources area.

Note   If there are less than 100 resource entries (VTGs, channels, users) in the system, the available resource lists in the VTG Participants tab are pre-populated. If the system has more than 100 resources, the resource list displays as blank and you must perform a search to populate it. Channel groups and user groups are always pre-populated.

To use the search utility to find a PTT channel, radio channel, user, or VTG, perform the following procedure:

Procedure

Step 1   From the VTG Management drawer in the Cisco IPICS Administration Console, click **Virtual Talk Groups**.

Step 2   Click the link of the VTG on which you want to search for channels, users, or VTGs.

Step 3   Click the **Participants** tab; then, click the **Search** link that appears above the Resources area.

A separate search window displays.

Step 4   From the View drop-down list box, in the top left corner of this window, choose one of the following options:

- **Channel**—Choose this option to search for channels.

- **Radio**—Choose this option to search for radio channels.

- **User**—Choose this option to search for users.

- **Virtual Talk Group**—Choose this option to search for VTGs.

The Search window adjusts to display fields that apply to the item for which you want to search.

Step 5   Take one of the following actions:

- If you are searching for a PTT channel, or a VTG, enter a text string for the channel in the Name field.

    A text string can be an entire channel name or VTG name, or it can be any consecutive characters in the name. For example, if you are searching for a VTG called Fire West, you could enter the text string "fire," and Cisco IPICS returns results based on the beginning character.

Text strings are not case sensitive.

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Tip   If you are searching for a channel, you can also search by the ops view of the channel by choosing an ops view from the Ops View drop-down list box.

Proceed to Step 6.

- If you are searching for a radio channel, take any or all of the following actions:

  – Choose a location from the Location drop-down list box.

  – Enter a text string for the radio for which you are searching.

  Proceed to Step 6.

- If you are searching for a user, enter information in any or all of the following fields:

  – User Name, First Name, and Last Name—Enter text strings for the user for whom you are searching.

  Text strings are not case sensitive.

  – Location drop-down list box—Location of the user

  – Role drop-down list box—Cisco IPICS role of the user

  – Ops View drop-down list box—Ops view to which the user belongs

  For example, if you know only a portion of the user name, but you also know that the user a dispatcher in the West Side location, you can enter a character string in the User Name field; then, choose Dispatcher and West Side from the Role and Location drop-down list boxes.

  Proceed to Step 6.

Step 6   Click **Go**. To clear your criteria, click **Clear Filter**.

The items that meet your search criteria display in the list at the bottom of the search window.

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Note   You can specify the number of rows of PTT channels, radio channels, users, or VTGs that display per results page by choosing from the Rows per page drop-down list box at the top right of the window. To navigate between the results pages, click the arrows at the bottom of the window; then click **Go**.

Step 7   To choose the resources that you want, check the check box to the left of each resource.

Step 8   Click **OK**.

The Search window closes and the search results display in the Resources area of the individual VTG window.

Best Practices for Managing VTGs

Cisco IPICS presents new opportunities for members of your organization to participate in conferences. Some of these members may be unfamiliar with the technology, conventions, and practices of PTT communication. For example, these users may have never used a PTT device or participated in a large conference with radio users.

A handheld radio user may be familiar with the experience of conferring only with a small number of other handheld users on a certain LMR channel. When the LMR channel for that user is placed in a VTG, that user becomes part of a potentially much larger and more diverse conference.

Changes in a conference can occur suddenly for conference participants, especially those who are participating with handheld radios. For example, at one moment, a user may be speaking with one or more radio users from the same department; then, when a dispatcher adds the LMR channel to a VTG, the user hears completely different voices.

The following guidelines can be helpful in assisting your new and experienced users with Cisco IPICS:

- Establish a dispatcher-only PTT channel and add this channel to every PMC and VTG. This channel allows the Cisco IPICS dispatcher to announce VTG changes to the participants, so that they can be made aware when users are added or removed from a VTG.

- Instruct new PMC users on the etiquette of PTT communication. For example:

  - In some network configurations, one or more users may not hear when another user breaks into a conversation

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

  - If extensive conversation is required, consider an alternate method of communication