



Performing Cisco IPICS Dispatcher Tasks

A Cisco IPICS dispatcher is responsible for setting up virtual talk group (VTG) templates, activating VTGs to begin conferences, and adding or removing members or participants in VTG templates 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 template at a particular time and then 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 certain ops view should create, edit, or delete policies that are associated with that ops view. If an operator or a dispatcher who belongs to the SYSTEM ops view modifies a policy that belongs to an ops view other than SYSTEM, it is possible to associate with the policy resources that are not accessible to the operators or dispatchers who are associated with that ops view. This situation can 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 VTG Management 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 1-11. Navigate to **VTG Management > Virtual Talk Groups**.

**Note**

You must be assigned the dispatcher role to access the Dispatcher 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 a VTG template, which is an inactive VTG. You use a VTG template to arrange participants that can communicate when you activate the VTG template. You can create as many VTG templates as necessary and activate any of them when needed.

After you activate the VTG, you can easily manage it by adding and removing users, PTT 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:

- [Understanding Virtual Talk Groups Window Icons](#), page 4-6
- [Managing VTG Templates](#), page 4-7

- [Managing Active VTGs, page 4-17](#)
- [Using the Search Utility, page 4-34](#)

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](#) and the “[Understanding Virtual Talk Groups Window Icons](#)” section on [page 4-6](#).

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 VTG templates 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 items in the Virtual Talk Groups window.

Table 4-1 *Items in the Virtual Talk Groups Window*

Item	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 and 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 template.	See the “ Managing VTG Templates ” section on page 4-7
Status field	This field indicates whether a VTG is active or inactive.	See the “ Managing Active VTGs ” section on page 4-17

Table 4-1 *Items in the Virtual Talk Groups Window*

Item	Description	Reference
Prompt field	<p>This field indicates whether a spoken name is recorded for the VTG template.</p> <p>This prompt plays for a user when the user logs in to the Cisco IPICS telephony user interface.</p> <p>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.</p>	See the “Managing Prompts” section on page 8-10
Add button	Click this button to add a new Cisco IPICS VTG template.	See the “Adding a New VTG Template” section on page 4-10 and the “Modifying a VTG Template” section on page 4-14
Delete button	Click this button to delete a VTG template.	See the “Deleting a VTG Template” section on page 4-16
Change Status drop-down list box	Choose from this drop-down list box to activate or deactivate a VTG template.	See the “Changing the Status of a VTG Template” section on page 4-19

The individual VTG windows contain information tabs:

- **General** tab—This tab allows you to manage information about the VTG template, 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 template, 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.

To access the Virtual Talk Groups window, log in to the Administration Console as described in the [“Accessing the Administration Console”](#) section on page 1-11, 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 VTG templates and active VTGs, see the [“Managing VTG Templates”](#) section on page 4-7, and the [“Managing Active VTGs”](#) section on page 4-17.

For information about the icons in the Virtual Talk Groups window, see the [“Understanding Virtual Talk Groups Window Icons”](#) section on page 4-6.







Understanding Virtual Talk Groups Window Icons

Various icons in the Virtual Talk Groups window provide important information. Some icons in the Resources area display with an arrow to their left. You can use this arrow to expand the area to show more information about the resource, such as how many users are in a user group or PTT channels in a channel group.

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.

[Table 4-2](#) describes the icons that can display in the Virtual Talk Groups window.

Table 4-2 *VTG Workspace Window Icons*

Icon	Meaning
	User
	User group
	PTT channel
	PTT channel group
	VTG
	Unavailable VTG channel For more information, see the “Reactivating a VTG” section on page 4-32.

Managing VTG Templates

A VTG template 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 template at any time, which brings the VTG participants together into a live conference.

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

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

The following sections describe information about managing VTG templates:

- [Guidelines for Managing VTG Templates, page 4-8](#)
- [Adding a New VTG Template, page 4-10](#)
- [Modifying a VTG Template, page 4-14](#)
- [Deleting a VTG Template, page 4-16](#)

You perform the VTG template 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 VTG Templates

When you are managing VTG templates, 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 a PTT channel into a VTG from the Users or Channels lists and that user or PTT channel already exists in a group within the VTG, the channel or user name does not appear another time as an individual user or PTT channel. If you drag a user or PTT channel into a VTG individually and then add a group that contains the user or PTT channel, Cisco IPICS does display the user or PTT 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 and 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 itself 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. They display crossed out in the VTG list.

- Mixing secure and non-secure channels in the same VTG is not recommended because users on secure channels will be able to hear users on non-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 Template” section on page 4-10](#).
- 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 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.

**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 VTG template 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.

**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 a VTG is deactivated 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 PTT channel that remains in the VTG, that user can continue to participate in the VTG through the PTT channel.
- 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 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.

Adding a New VTG Template

When you add a VTG template, you specify the name of the VTG and, typically, designate the members who are participants in the VTG. You can activate the VTG template 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 a VTG is deactivated 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 template, 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 2-21](#).
- 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, enabled the 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 true (attribute check box is checked).

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 add participants to the VTG template, click the **Participants** tab.

Step 13 To view the available resources that are configured in Cisco IPICS and which can be added as participants in this VTG template, 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.

- **Users**—Lets you view the available users that are configured in Cisco IPICS.
- **User Groups**—Lets you 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 14 Add any number and any combination of these resources to the VTG template as described in the [“Guidelines for Managing VTG Templates” section on page 4-8](#).



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



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 15 Click **Save** to add the VTG template without exiting the current window.
If you do not want to save your changes, click **Cancel**.

Step 16 To activate the VTG from this window, click **Activate VTG**.

Modifying a VTG Template

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

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

To modify a VTG template, 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 template, 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 2-21](#).
- 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, enabled the 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 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 true (attribute check box is checked).

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

Step 11 From the View drop-down list box in the Resources area, choose from the following criteria:



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.

- **Users**—Choose this option to view the available users that 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 12 To add participants to the VTG template after choosing the view in [Step 11](#), see the “[Guidelines for Managing VTG Templates](#)” section on page 4-8.

**Tip**

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

Step 13 Click **Save** to modify the VTG template without exiting the current window. If you do not want to save your changes, click **Cancel**.

**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 14 To activate a VTG template in this window, click **Activate VTG**.

Deleting a VTG Template

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

You cannot delete a VTG template that is associated with an active VTG. To delete such a VTG template, 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 template 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**.

**Tip**

To simultaneously delete all the VTG templates 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, page 4-17](#)
- [Changing the Status of a VTG Template, page 4-19](#)
- [Adding Participants to and Removing Participants from an Active VTG, page 4-20](#)
- [Muting or Unmuting a PMC User in an Active VTG, page 4-23](#)
- [Notifying and Dialing Out to Participants, and Setting PMC Attributes in an Active VTG, page 4-29](#)
- [Reactivating a VTG, page 4-32](#)

Guidelines for Managing Active VTGs

When you are managing active VTG templates, 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. 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 PTT channel can be a participant in one active VTG at a time. If you try to add a PTT channel that is in an active VTG to another active VTG, or try to activate another VTG that has the PTT channel in it, Cisco IPICS shows the PTT 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 Template

A VTG can have either of the following statuses:

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

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

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



Note

Activation or deactivation of a VTG requires that the Cisco IPICS server communicate with the RMS. If a VTG is deactivated 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 template 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 PTT 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 template 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 VTG templates, access the VTG Management drawer, click **Virtual Talk Groups**, and look at the information in the Status column for the VTG templates.

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 template.

- Check the check box next to each VTG template 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 template and are not saved to the VTG template 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 template, 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:

**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.

**Note**

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

- **Users**—Choose this option to view the available users that 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 template, after choosing the view in [Step 4](#), see the [“Guidelines for Managing VTG Templates” section on page 4-8](#).

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**.
-

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 2-21](#) 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 2-21](#) 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, and 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, and then click **Save**.

This setting disables the channel 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 and 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 2-21](#) 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 2-21 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**.

**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 2-21 for more information about modifying attributes that are part of an association.

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

**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 4-29.

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, and enabling and disabling PMC attributes for selected VTG participants.

When you activate a VTG template in Cisco IPICS, you can invite the participants to join the VTG. This invitation can be in the form of an e-mail that can be specified for e-mail message, SMS text message, or pager delivery. The notification can also be a phone call, depending on the communication preferences that have been set for the 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, inviting them to join the VTG. The policy engine obtains the e-mail contact information 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.

**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, and then attempt to place a call to the participants by using the dial preferences that were set in the user profile.

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.

**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 **VTG Management > Virtual Talk Groups**.
 - Step 2** Click the link of the active VTG for which you want to initiate actions.

**Note**

To activate a VTG template in Cisco IPICS, see the [“Changing the Status of a VTG Template” section on page 4-19](#).

- Step 3** From the View drop-down list box in the Participants tab, 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 who are participating in this VTG.
- **Users**—Choose this option to view the users who are participating 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 are participating in the VTG.

Step 4 To choose the participants that 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, to join an active VTG. When you choose participants to be invited to this VTG, Cisco IPICS automatically notifies those participants in the form of an e-mail. Notification is sent via e-mail message, SMS text message, or page. Cisco IPICS obtains the e-mail addresses and delivery options from the communication preferences information that the users and/or Cisco IPICS operators entered in the user profiles.
- **Dial Participants**—Choose this option to dial out to selected participants to invite them to join an active VTG. When you choose participants to whom you want to 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.

An 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 lets 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 it.

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 2-67](#).

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

- Identify the active VTG to which this channel is associated by performing the following steps:

- In the Configuration drawer, click **Channels**.
 - In the Channels list, click the channel name link.
 - Click the **Associations** tab.
 - From the View drop-down list box, choose **Virtual Talk Groups**.
 - Look at the active VTG that is listed in the Virtual Talk Groups list, and then navigate to **VTG Management > Virtual Talk Groups**.
 - Choose the active VTG that was listed in the Associations tab of the Channels window.
- Locate the additional VTG in which this channel is a participant by performing the following steps:
 - In the VTG Management drawer, click **Virtual Talk Groups** again.
 - Click the link of another active VTG in the Virtual Talk Groups list and see if the channel is a participant in that VTG.
 - 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**.
- 

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, user, or VTG by using the search utility. The search utility is located in the Virtual Talk Groups window of each individual VTG template.

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, 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, and 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:
- **By Channel**—Choose this option to search for channels.
 - **By User**—Choose this option to search for users.
 - **By VTG**—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 Channel Name field, or enter a text string for the VTG in the VTG 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.


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 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 is a dispatcher in the West Side location, you can enter a character string in the User Name field and 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.


Note

You can specify the number of rows of 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.

Other PTT users may be surprised by the experience of participating in a Cisco IPICS-managed conference. For example, 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 a conference participants, especially those 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
- If extensive conversation is required, consider an alternate method of communication