



# Troubleshooting Voice Recognition

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## Troubleshooting Voice Recognition

### Users Hear the Phone Keypad Conversation Instead of Voice-Recognition Conversation

Use the following questions to determine the source of the problem and to correct it:

1. Does this problem occur for all users whose accounts are configured for voice recognition? If yes, do the following:

Confirm that the class of service (COS) is configured to enable voice recognition. On the Edit Class of Service page, under Licensed Features, check the Allow Access to Advanced Features check box and then check the Allow Users to Use Voice Recognition check box.

Confirm that the affected users are associated with the correct COS.

2. Does this problem occur only for a single user whose account is configured for voice recognition? If yes, do the following:

Confirm that the affected user is associated with the correct class of service.

Confirm that the phone menu input style is set to voice recognition. The input style can be set either in the Messaging Assistant web tool or in Cisco Unity Connection Administration.

3. Do users hear a prompt indicating that voice-recognition services are not available when they first sign in?

If so, see the [Error Prompt: There Are Not Enough Voice-Recognition Resources, on page 2](#) .

1. Is the correct codec being used?

Voice recognition does not work if the Unity Connection server or the phone system is using G.729a, if the G.729a prompts are installed, or if greetings and names were recorded in an audio format other than G.711 Mu-Law.

## Error Prompt: There Are Not Enough Voice-Recognition Resources

When a user hears the error prompt “There are not enough voice-recognition resources at this time. You need to use the standard touchtones for the duration of this call,” do the following:

1. Confirm that the Connection Voice Recognizer service is running on the Tools > Service Management page in Cisco Unity Connection Serviceability.




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**Note** For information on Cisco Unity Connection Serviceability, see the Administration Guide for Cisco Unity Connection Serviceability *Release 12.x*, at [https://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/connection/12x/serv\\_administration/b\\_12xcucservag.html](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/12x/serv_administration/b_12xcucservag.html).

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2. Check the Unity Connection license on the System Settings > Licenses page in Cisco Unity Connection Administration. It may be that all licensed voice-recognition sessions are being used. If users report that the error occurs frequently, it is likely that voice-recognition usage has outgrown current licensing capacity on your Unity Connection server.
3. Check for errors generated by the Unity Connection Voice Recognizer service. You can use the Real-Time Monitoring Tool (RTMT) to view errors in the diagnostic logs that are generated with the default traces turned on. The trace log filenames are in the format `diag_NSSserver_*.uc`.




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**Note** For information on RTMT, see the applicable *Cisco Unified Real-Time Monitoring Tool Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unity-connection/products-maintenance-guides-list.html>.

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## Voice Commands Recognized But Names Not Recognized

When administrators add or change names on the Unity Connection system, the names are not recognized by the voice-recognition conversation until they are compiled in the grammars. The timing of the grammar compilation can therefore affect name recognition. In other cases, there may be a search scope problem, or the names may not be pronounced the way they are spelled. Use the following troubleshooting steps to determine the source of problem and to correct it:

- Check to make sure that the name is found in the search scope of the user or directory handler, depending on where the recognition problem occurs. The search scope of a user who has signed in is defined on the User Basics page in Cisco Unity Connection Administration. The search scope of a directory handler is defined on the Edit Directory Handler Basics page.
- Check the Voice Recognition Update schedule on the System Settings > Schedules page in Connection Administration; if names have been added during inactive periods in this schedule, they are not recognized until the schedule is active, at which time Unity Connection automatically updates the name grammars.
- Make sure the Unity Connection Voice Recognition Transport service is running on the Tools > Service Management page in Cisco Unity Connection Serviceability.



**Note** For information on Cisco Unity Connection Serviceability, see the Administration Guide for Cisco Unity Connection Serviceability *Release 12.x*, at [https://www.cisco.com/en/ustd/docs/voice\\_ip\\_comm/connection/12x/serv\\_administration/b\\_12xcucservag.html](https://www.cisco.com/en/ustd/docs/voice_ip_comm/connection/12x/serv_administration/b_12xcucservag.html).

- Check the Tools > Grammar Statistics page in Cisco Unity Connection Administration to see if a grammar has updates pending. To force an update when a grammar says that updates are pending but does not say it is rebuilding, select the Rebuild Grammars button.
- If the problem occurs in a voice-enabled directory handler, try adjusting the Speech Confidence Threshold setting for the directory handler. A lower speech confidence threshold level results in more matches when callers say names, but when callers say digits, extraneous extension matches are returned. A higher speech confidence threshold level results in more precise extension matching, but fewer name matches.
- If the voice-recognition system is having trouble understanding how a particular name is pronounced, consider adding nicknames or alternate names. You can use both of these features to add different pronunciations for names that are not pronounced the way they look. (For example, if a username is Janet but is pronounced Jah-nay, you could add the pronunciation “Jahnay” as an alternate name or nickname.)

## Voice Commands Not Recognized

When users encounter issues with poor recognition of voice commands, the problem may stem from many sources—the wrong command being used, issues with pronunciation or foreign accent recognition, a poor phone Unity Connection, jitter in the network, and so on. Use the following troubleshooting steps to narrow down the source of the problem and to correct it:

1. Determine the nature of the problem.

If the user is having a problem with a single command, see the “Voice Commands” section in the “[Phone Menus and Voice Commands](#)” chapter of the User Guide for the Cisco Unity Connection Phone Interface (*Release 12.x*) for a table of preferred voice commands. (The guide is available at [https://www.cisco.com/en/us/td/docs/voice\\_ip\\_comm/connection/12x/user/guide/phone/b\\_12xcucugphone.html](https://www.cisco.com/en/us/td/docs/voice_ip_comm/connection/12x/user/guide/phone/b_12xcucugphone.html).) Although the voice-recognition grammar files contain many synonyms for the preferred commands, it is not possible for them to contain every word or phrase a user might say. For the best performance, encourage users to use the preferred commands.

If the user is having a problem with Unity Connection taking unintended actions without prompting for confirmation, or if Unity Connection is prompting for confirmation too frequently, check the Voice Recognition Confirmation Confidence Threshold setting. See the [Checking the Voice Recognition Confirmation Confidence Setting](#).

2. Try to reproduce the problem while running the Remote Port Status Monitor to determine which voice commands as per Unity Connection are being uttered. See the [Using the Remote Port Status Monitor](#).
3. Capture and listen to user utterance files to determine if the problem is related to audio quality or accent recognition. See the [Using the Utterance Capture Trace to Review User Utterances](#).
4. Enable diagnostic traces and try to reproduce the problem. See the [Using Diagnostic Traces for Voice Recognition](#).

## Checking the Voice Recognition Confirmation Confidence Setting

You can use the Voice Recognition Confirmation Confidence Threshold setting to specify how frequently Unity Connection should prompt the voice recognition user to verify certain user intentions. For example, if users complain that the system mistakenly hears them say “cancel” or “hang up,” you can try increasing the value of this setting to prevent users from accidentally committing actions they did not intend. Alternatively, if users complain that the system prompts for confirmation too frequently, try adjusting this setting to a lower value.

Voice Recognition Confirmation Confidence Threshold is set on a systemwide basis on the System Settings > Advanced > Conversations page in Cisco Unity Connection Administration. The setting also can be changed on a per-user basis on the Phone Menu page for an individual user.

A realistic range of values for this setting is 30 to 90. The default value of 60 should reliably filter out most errors and provide confirmation when necessary for most systems.

## Diagnostic Tools for Troubleshooting Voice Recognition Problems

This section covers the diagnostic tools that help you troubleshoot voice-recognition problems.

### Using Diagnostic Traces for Voice Recognition

Cisco Unity Connection Serviceability offers diagnostic micro traces and macro traces for help in troubleshooting voice-recognition issues. For detailed instructions on enabling the traces and viewing the trace logs, see the [Using Diagnostic Traces for Troubleshooting](#) section.

#### Micro Traces

- Conversation Development Environment (CDE)
  - 10 State Machine Trace
  - 22 Speech Recognition Grammar
- Media: Input/Output (MiuIO)
  - 25 ASR and MRCP
- Subscriber Conversation (ConvSub)
  - 03 Named Properties Access
  - 05 Call Progress
- Phrase Server
  - 10 Speech Recognition

#### Macro Traces

Set the Voice User Interface/Speech Recognition Traces.



**Note** Use this macro trace only if you have first tried to diagnose the problem using the recommended micro traces. The macro trace generates a large amount of diagnostic information which can be difficult to sort through.

## Using the Utterance Capture Trace to Review User Utterances

When you enable the VUI micro trace level 05 (Capture Utterances), Unity Connection saves user utterances as WAV files in CCITT (u-law) 8-kHz mono format. The files are stored on the file system, with one folder created for each MRCP session. (You can view MRCP session information for a call in the diagnostic logs by enabling the MiuIO level 25 micro trace for ASR and MRCP.)

You can access the utterance files using the Real-Time Monitoring Tool (RTMT).



**Caution** Enabling the utterance capture micro trace can affect system performance. Consider doing so only when the system is not under heavy load, and be sure to disable the trace when you are done collecting the desired utterances.

### Enabling and Viewing Utterance Capture Traces Using RTMT

- Step 1** In Cisco Unity Connection Serviceability, on the Trace menu, select **Micro Traces**.
  - Step 2** On the Micro Traces page, in the Server field, select the name of the Unity Connection server and select **Go**.
  - Step 3** In the Micro Trace field, select **VUI** and select **Go**.
  - Step 4** Check the **Capture Utterances** check box (level 05) and select **Save**.
  - Step 5** Reproduce the problem.
  - Step 6** To access the utterance files, launch Real-Time Monitoring Tool (RTMT). For details, see the "Traces and Logs" chapter of the Cisco Unified Real-Time Monitoring Tool Administration Guide, Release 12.0(1), available at <http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.
  - Step 7** In RTMT, on the System menu, select **Tools > Trace > Trace & Log Central**.
  - Step 8** In the Trace & Log Central tree hierarchy, double-click **Remote Browse**.
  - Step 9** In the Remote Browse window, select **Trace Files** and select **Next**.
  - Step 10** In the Select CUC Services/Application tab, check the check box next to the IP address of the server and select **Next**.
  - Step 11** In the Select System Services/Applications tab, select **Finish**.
  - Step 12** When the Result pop-up displays, indicating that the Remote Browse is ready, select **Close**.
  - Step 13** On the Remote Browse tab, browse to the **Nodes > Server Name > CUC > Unity Connection Voice Recognition Transport** folder.
  - Step 14** In the Unity Connection Voice Recognition Transport folder, double-click the name of a folder to view the audio files that were captured for that MRCP session. (One folder is created for each MRCP session.)
  - Step 15** In the files pane, double-click the name of an audio file to play it.
  - Step 16** In the Open With window, select the application you want to use to play the audio file.
- If an appropriate audio player is not available in the list, select the **Other** tab at the bottom of the window, browse to the location of an audio player, double-click the name of the audio player executable, and select **Open**. Then select the name of the application you just added.

- Step 17** Select **OK**.
- Step 18** In Cisco Unity Connection Serviceability, disable the trace that you enabled in [Step 3](#), then select **Save**.
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## Using the Remote Port Status Monitor

The Remote Port Status Monitor tool is useful for troubleshooting voice-recognition problems because it displays the conversation flow for a call in real time, including speech input and confidence scores, system interpretations of utterances, and changes to the search scope that can affect name and digit interpretation during the course of the call. To use the tool, do the following procedures in order.

### To Download the Remote Port Status Monitor

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- Step 1** In a web browser, go to the Cisco Unity Tools website at <http://www.ciscounitytools.com>.
- Step 2** In the Tool Update Log section, select **Port Status Monitor**.
- Step 3** On the Cisco Unified Communication Tools page for the Port Status Monitor, select **Download Now**.
- Step 4** Follow the on-screen instructions to download the Remote Port Status Monitor tool.
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### To Configure Unity Connection for the Remote Port Status Monitor

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- Step 1** In Cisco Unity Connection Administration, expand **System Settings**, then select **Advanced** > **Conversations**.
- Step 2** On the Conversation Configuration page, check the **Enable Remote Port Status Monitor Output** check box.
- Step 3** In the IP Addresses Allowed to Connect for Remote Port Status Monitor Output field, enter the IP addresses of your workstations and select **Save**.
- Note** You can enter up to 70 IP addresses. Each IP address must be separated from the following IP address by a comma.
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