

# Mumble VoIP Software

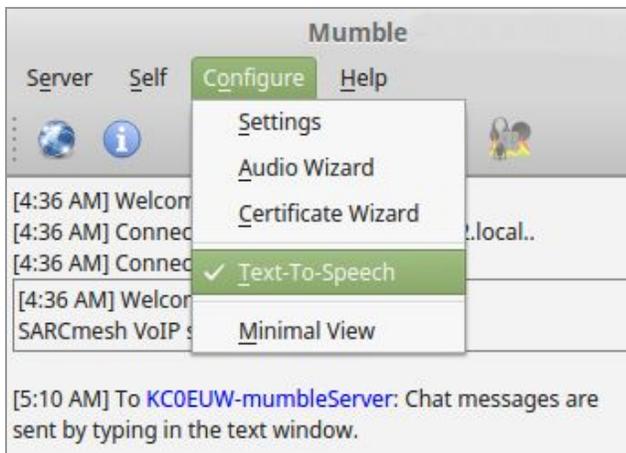
[Mumble](#) is a VoIP package that allows client programs to freely communicate with each other across the network. The primary users of *Mumble* are Internet video gamers who want to have voice and text chat conversations during game play. However, it can also be used as a non-gaming VoIP service which does not require that an IP-PBX server exist on the network. *Mumble* is open source software that is available for Linux, MacOS, and Windows systems. Mobile apps are also available, such as [Mumblefy](#) for iPhone and [Plumble](#) for Android.

## Using the Mumble Client Program

After starting the *Mumble* client program, open the *Mumble Server Connect* display to select a server. This display lists the available servers and shows how many users are currently connected to them. You can use your call sign as the username when connecting.



You can also connect to a *Mumble* service by clicking on the service link from the AREDN® *Mesh Status* display. Since the service protocol is “mumble://”, the web browser will automatically try to open the *Mumble* client program if it is not already running on your computer.

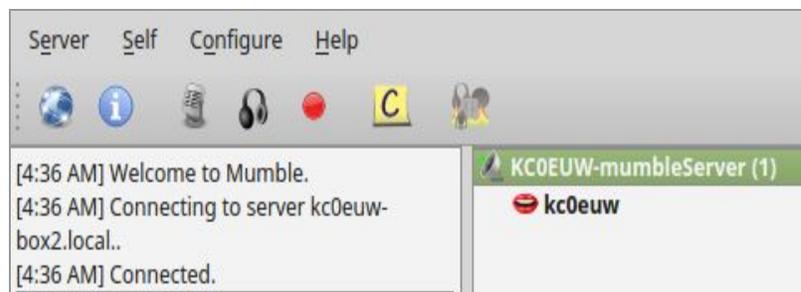


Type in the chat box to send text messages to other users on the server or channel. If you have “Text-To-Speech” enabled, incoming messages will be read to you automatically by your computer. You can set the location of the chat box and other layout features by clicking Configure > Settings > User Interface on the program menu bar.

To change the settings of your *Mumble* client, click the settings icon or select the Settings option on the program's Configure menu. On the **Audio Input** tab, make sure you have selected the correct audio input/microphone device. If you do not see the device selection dropdown box, you may need to click the *Advanced* checkbox in order to display some configuration options. You can also set *Push To Talk*, *VOX*, or *Continuous* mode for your microphone. Understand that *Mumble* allows multiple users to talk simultaneously, so decide which audio mode is best suited for your specific network connection and purpose.

The **User Interface** tab allows you to customize the program's look-and-feel to your liking. The **Shortcuts** tab lets you set keyboard shortcuts. For example, if you have Push-To-Talk enabled you will probably want to set a keyboard shortcut so you can begin your conversation with the push of a key rather than a mouse click. It is recommended that you choose a PTT key which is not typically used when typing text chat messages, because each time the key is pressed your microphone will open.

When you begin a voice conversation and your microphone is open you will notice that the mouth icon changes color from gray to red. This indicates that your voice is being transmitted to everyone listening on the channel. Remember that all



users are allowed to talk simultaneously. In order to avoid confusion, however, it may be a good practice to adopt typical amateur radio protocols in use for net control.

Under the **Self** menu option, or by clicking the appropriate icon on the menu bar, you can mute your microphone (*Mute*) or your headset (*Deafen*). You can also create an audio recording of the conversation, if needed, by selecting *Recording* or pressing the red *Record* icon.

## Configuring a Mumble Server (*Murmur*)

Client programs connect to each other through a server, which can be hosted locally by downloading and configuring the open source *Murmur* or *µMurmur* software. There are many online sources of information and tutorials for installing and configuring *Mumble* servers on different platforms ([https://wiki.mumble.info/wiki/Installing\\_Mumble](https://wiki.mumble.info/wiki/Installing_Mumble) and <https://pimylifeup.com/raspberry-pi-mumble-server/>).

In contrast to typical IP-PBX servers, *Murmur* does not require any special skills to configure and it is a very lightweight process that does not tax limited computing resources. *Mumble* uses a low-latency audio codec ([Opus](#)), and the number of users and amount of bandwidth allowed per user is configured by the server owner based on the characteristics of the network on which it is deployed.

*Murmur* configuration settings are stored in an *INI* file. The default settings will work in most cases, but they can be edited as necessary. The following shows some of the settings that you might consider changing for your specific implementation.

```
# Welcome message sent to clients when they connect.
welcometext="<br />Welcome to <b>Mumble</b>."

# Uncomment 'registerName' if you wish to give your "Root" channel a custom name.
registerName=Mumble Server

# Maximum bandwidth (in bits per second) clients are allowed to send speech at.
bandwidth=72000

# Maximum number of concurrent clients allowed.
users=100
```

If you change any settings in the *INI* file, save the changes and restart *Murmur*.

Server owners can create as many sub-channels as necessary for grouping conversations (for example, by topic, location, or tactical purpose). Once channels have been created, users may join them in order to participate in relevant conversations.

If you want to communicate with a specific group of users, then they must all be logged into the same *Mumble* server and channel. While it is possible for any user to run a separate *Mumble* server, it is not often practical or necessary. A team should have a primary server on a robust network link, with one or two backup servers that can be used if the primary becomes unreachable. Confusion can be minimized by standardizing on the primary/backup servers being used for normal operations.