

## Installing and Configuring Mumble for Amateur Radio Remote Operations, Including Contesting

Gerry Hull, W1VE [gerry@w1ve.com](mailto:gerry@w1ve.com)

What is Mumble?

Mumble is a free, open-source, high-performance, low-latency audio conferencing server. It's high quality and low latency, combined with it's ability to conference, is GREAT for single And multi-op ham radio use.

There are Mumble clients for Windows, Mac (OSX), Ipad (IOS), Android and Linux.

Mumble users communicate on channels. A Mumble client on each end connects to a common channel, and volia: you have audio. So, as a ham, you'll need a client at the radio, and a client where your remote operation is taking place from.

*This guide will talk about how to configure under Windows. The same concepts can be used to configure for other operating systems.*

Getting Mumble...

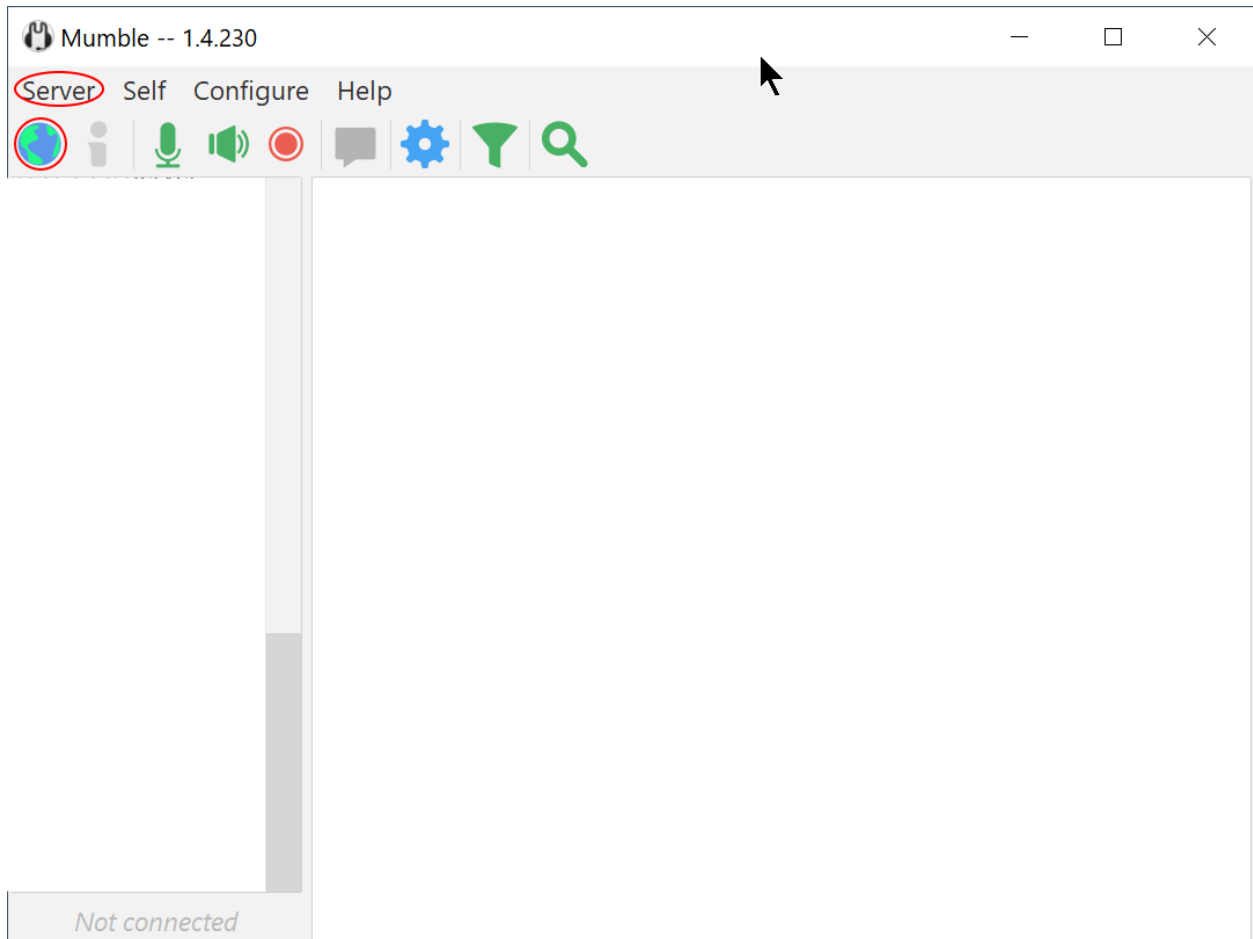
To download Mumble, go to [www.mumble.com](http://www.mumble.com) and select the version of Mumble appropriate for your operating system. For most, this is 64-bit Windows, and the download link is:

[https://download.mumble.com/en/mumble\\_client-1.4.230.x64.msi](https://download.mumble.com/en/mumble_client-1.4.230.x64.msi)

After you install the client, run it.

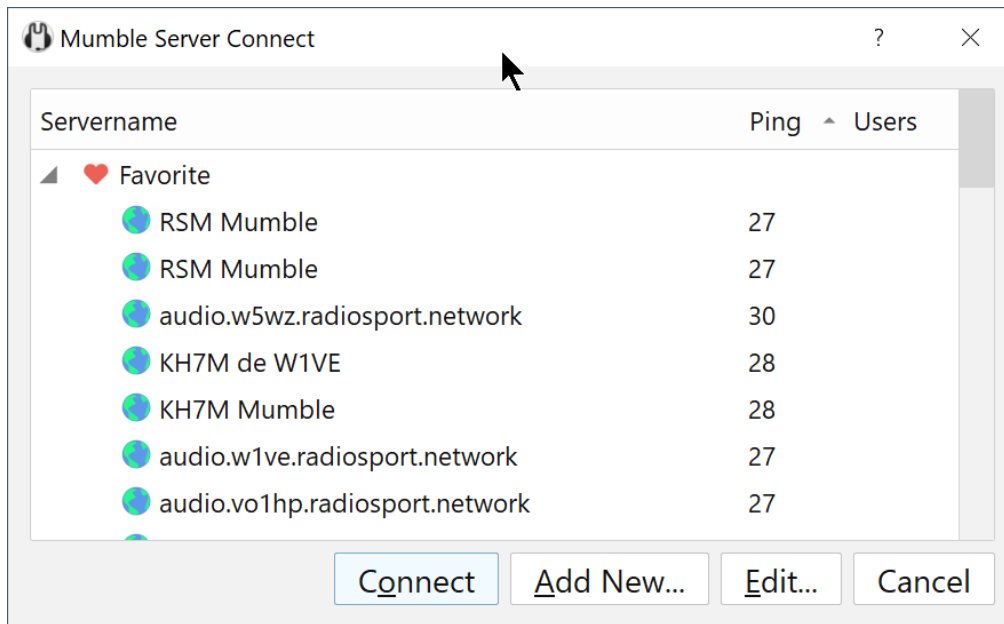
When you first start Mumble, it automatically runs a bunch of Wizards. **You should cancel out of ALL of them.** Why? One reason is because it will fill your server list with 1000 servers you will never use! The other is it is much waste to configure Audio until later in the process.

Once you have Mumble up, go to the Server->Connect menu or press the World icon.



Click the Server->Connect menu, or click the World Icon

Now you will see a list of servers -- which should be empty if you have done what I said above.



This is the Connect dialog. You probably won't have any in your list. (Note the ping times to servers. If a server is down you won't see a ping time, and Will not be able to connect.)

This document does not discuss setting up your own Mumble Server – that's a task for another day.

### About Mumble Servers

You can host a private Mumble server in your own shack. However, that will require a publicly available IPV4 address and port forwarding. With an external Mumble server, you can connect from any Internet topology (Cellular, NAT, Double NAT, CGNAT, ipv6 – all will work). Additionally, if you have more than one operator connecting, their will still be only ONE connection to your radio shack internet connection (per radio).

There are TONS of public Mumble servers, however, because we are a licensed service, you would not want to connect your rig to a public Mumble server. Anyone could connect, and You could allow non-hams to transmit.

For testing and experimentation purposes, I have quite a few ham radio Mumble Servers. You are welcome to use them as much as you like. They are geographically diverse, so you should pick one close to you. If you are interested in your own server, I'm happy to set you up with a local, private server close to you, for \$10/year. Email me at [gerry@w1ve.com](mailto:gerry@w1ve.com) if interested.

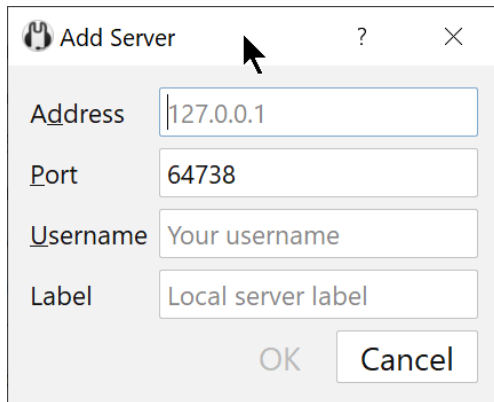
My public servers are all on the default Mumble port, and all have the password: **Demo**

My public Mumble server list for ham radio:

na.audio.radiosport.network	(Northeast USA)
Midwest.audio.radiosport.network	(Midwest USA)
northwest.audio.radiosport.network	(Seattle USA)
sa.audio.radiosport.network	(Miami USA)
eu.audio.radiosport.network	(Frankfurt, Germany)
asia.audio.radiosport.network	(LA, USA)
arctic.audio.radiosport.network	(Winnipeg, Canada)

Let's get connected to a server.

Click the "Add New..," button in the server diaog. You will see this:



The DNS name or IP Address goes in the Address box. You can choose from my server list above or enter the address of a server you know.

Port 64738 is the default Mumble port (it's TCP). You may have been given info for a different port on your server. If you have, enter that.

For the username, I typically have this convention:

- If on the radio side, enter "Radio", or something descriptive, like "TS-590".
- For the Remote, operate side, enter the callsign, like "W1VE"

The Label is just a label. Often, I make it the same as the DNS name.

Click OK.

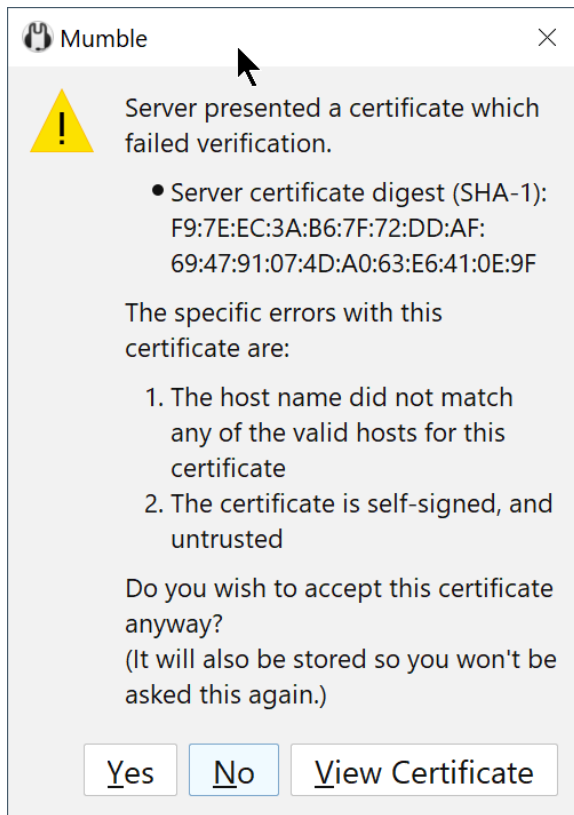
Connecting to a Mumble Server for the first time:

Bring up the Server dialog: (remember, click Server->Connect, or click the Globe icon)

Double-click a server, or highlight one and click "Connect".

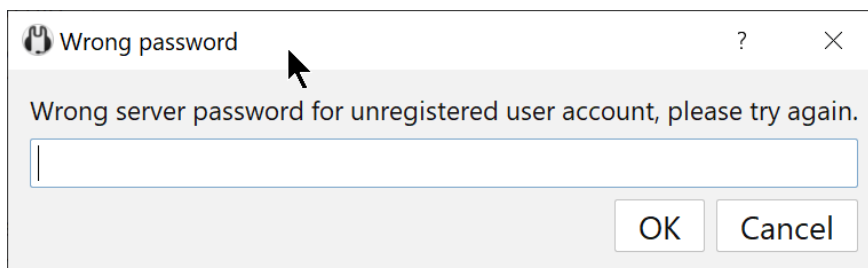
**NOTE: These next steps ONLY happen the first time you connect to a new server!**

You will be presented with an Accept Certificate dialog that looks like this:



Mumble uses TLS encryption (yes, all audio is encrypted). In order to do that, it needs certificates. These are self-signed certificates. You must press **Yes**.

The next dialog will be:



You will **ONLY** see this if you have never been in a server before, or, if the server password changes after you have successfully logged in. For my demo servers, the password is **Demo**.

Once you have entered the password, you should see the main Mumble display:

**Message Window and Chat**

welcome to the radiosport.network server in Seattle, Washington USA operated by Gerry W1VE and running **Murmur**. If you would like your name in the log, contact gerry@w1ve.com. Enjoy your stay!

[14:33:58] Server maximum network bandwidth is only 72 kbit/s. Audio quality auto-adjusted to 57 kbit/s

Type message to channel 'Operator Chat 1' here

NorthWest North America Mumble Server for Amateur Radio

- Operator Channel 2
- Operator Chat 1** ← **Each arrow points to a "channel" To hear/talk, both parties must be in the same channel**
- W1VE ← **This is where you "land" on this server.**
- Station 1 ←
- Station 2 ←

**To change channels, there are three ways:**

- Drag yourself to another channel.
- Double-click the channel name.
- Right-click the channel and choose "Join"

**NOTE: Your "person" icon will be blue when sending audio, green if not.**

#### AUDIO SETTINGS:

To set up audio, once you've connected to a server, go to the Configure->Settings menu, and this Dialog will be shown:

**Audui input is the rig audio out on radio side or your MIC on the remote side.**

**Audio I...**

**Interface**  
 System WASAPI Device Default Device **Choose the appropriate sound card device here**  
 Exclusive

**Transmission**  
 Transmit Voice Activity **For your Mic, choose "Voice Activity", for radio, choose "continuous"**  
 Amplitude  Signal to Noise  
 Voice Hold 0.50 s  
 Silence Below  
 Speech Above **For the mic, adjust Silence Below and Speech above so when you talk, you see GREEN peaks.**

**Compression**  
 Quality 88.0 kb/s  
 Audio per packet 20 ms  
 Allow low delay mode  
 102.8 kbit/s (Audio 88.0, Position 0.0, Overhead 14.8)

**Audio Processing**  
 Max. Amplification 1.00  
 Echo Cancellation Disabled **Always disable Echo Cancellation**  
 Noise suppression **ALWAYS disable Noise Supression**  
 Disabled  Speex  RNNoise  Both

**Misc**  
 Audio cue On :/on.ogg Browse... Preview  
 Off :/off.ogg Browse... Reset  
 Mute cue :/off.ogg Browse... Preview  
 Idle action after 5 minutes do nothing  
 Undo Idle action upon activity

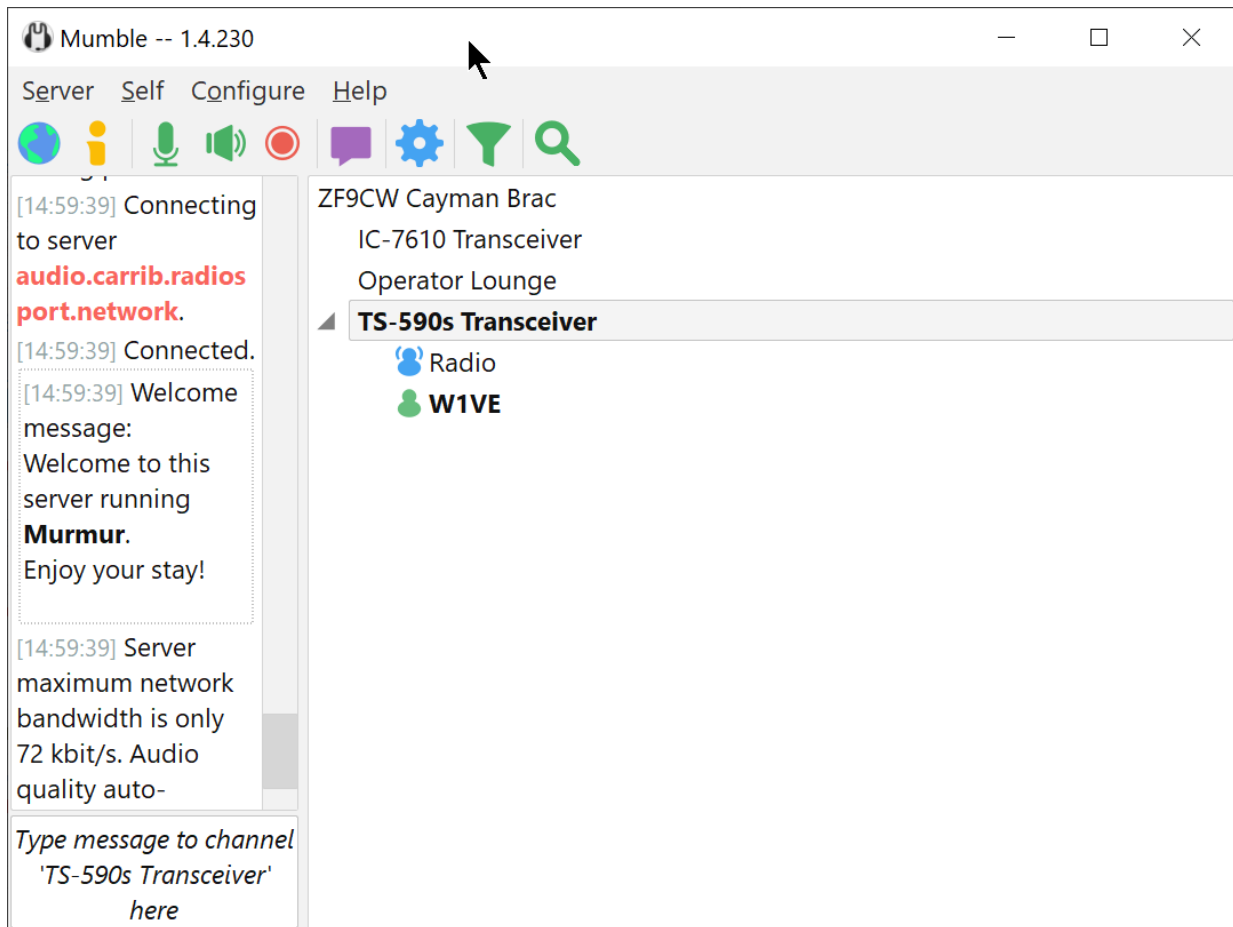
**NOTE: On the audio output section, just choose the sound card where you want Mumble audio delivered.**

**You must click Apply for things to work.**

Reset Restore Defaults Defaults (All) OK Cancel Apply

## Working with Mumble

Here's a connected session:



This is me connected to the ZF9CW station, the TS-590s radio. Since the radio audio is set up to send continuously, you note the Radio icon is Blue, because it is sending audio.

If I talk into my Mic, my icon turns blue as well. Mumble has “Soft” vox – you set the thresholds. Of course, you must use Vox on your radio as well. For CW operation, you’ll be sending over your Anydesk or TeamViewer connection and logging software.

Good Luck!

73,

Gerry Hull  
[gerry@w1ve.com](mailto:gerry@w1ve.com)  
December 2022