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# A User Guide for installing and using Jamulus on an **Android device**



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“Jamulus” is software designed to allow musicians to play and sing together remotely via the Internet. It is audio only, but does not suffer from the latency (lag, delay) associated with traditional video conference systems (such as Zoom). This allows musicians to play/sing together as if they were in the same room.

You **MUST** use headphones/headset/earbuds when using Jamulus (and preferably of the wired variety).

The instructions in this document are for the installation and use of Jamulus on an Android device, **BUT NOTE** that at the time of writing the Android version of Jamulus has only just been released (v3.7.0), as a “Proof of Concept” (PoC), however it seems to work perfectly well enough! Because the software is not (yet) available on the Google Play Store, the installation is “manual” – it’s pretty straightforward, and is described in this document.

Your group (choir, band or orchestra) may have some “Technical Friends” available for advice and guidance, but please try DIY first.

If you wish to have visual contact with fellow musicians, use a video conference system (such as Zoom – other systems are available) **on a different device, with all sound muted**, but note that the video and audio will not be synchronised, with video lagging behind by around 0.5 seconds.

And just before you dive in, if you are a singer, please remember to read the section at the end of this document, Tips & Hints for Singing in a Jamulus Room, because the choral experience is a little different on Jamulus...

This document prepared by Nick (mail@hyho.me) – please also refer to the home of Jamulus at <https://jamulus.io>

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1. Essential Equipment

1. **Android Phone or Tablet** (see elsewhere for Windows, Mac & Linux; sorry, Jamulus is not yet available for Apple’s iOS devices)
2. **Good Broadband** (Internet) connection (see below)
3. **Headphones**
 - a. You **MUST** use headphones with Jamulus, or you’ll get screeching feedback from (a) your speakers, and (b) other users!
 - b. Plain **wired** headphones are fine – the device’s built-in microphone should then automatically be used, giving a good result
 - c. A **wired** headset/earbuds consisting of headphones plus mic is also fine, although the mic may not be best suited to singing
 - d. USB connected headphones/headsets work fine
 - e. Bluetooth headphones are unlikely to give a good experience because of the added latency

2. “Good” Broadband

“Good” broadband can be achieved through home broadband routers, preferably using a wired connection (yes, wired Ethernet adapters can be used with Android devices, especially those with later USB “C” connectors) although Wi-Fi can work adequately. 4G/5G connections can also work.

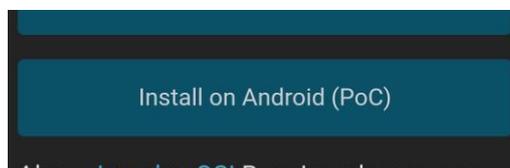
3. Software Installation

The method for downloading and installing the software (particularly around the security of installing from “unknown sources”) will vary slightly between devices. The details shown here used Chrome on a Samsung phone...

Go to <https://jamulus.io/>. Near the top of that page, you should see:

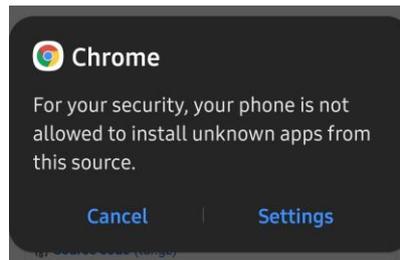


Tap on the “Get started now” button, scroll down, and tap on the “Install on Android (PoC)” button:

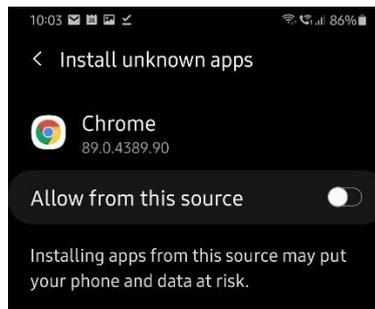


When the installation file has finished downloading, tap on “Open”.

At this point your device will probably complain that for (absolutely right & proper) security reasons it doesn't want to install from an "unknown source":



Tap Settings to see:



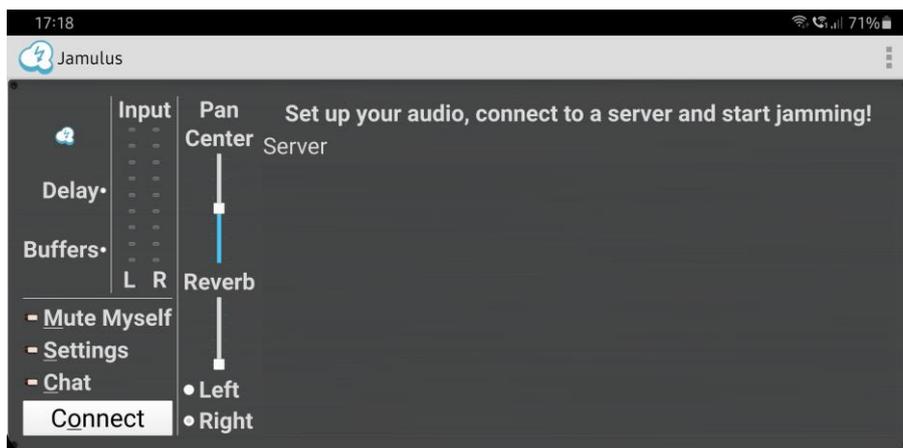
Tap "Allow from this source" to turn it "On", then tap the arrow to return to the previous screen, where you can now tap the "Install" button, and you're done!

Don't forget to turn "Allow from this source" back to "Off" in your security settings! How you do this is device-specific, but a Technical Friend can help you if required.

4. First Time – Setting up your Profile

First plug in your Headphones/Headset!

Run Jamulus, allow it to "record audio", and you should see a window like this:



This is the main Jamulus window, which will start off with a blank area in which "sliders" will appear later when you get connected – this will be your own personal mixing desk). The various items on this window will be covered later. The window is "forced" to landscape orientation.

Open the menu (three dots) at the top of the main window, tap View and then My Profile:

- Your group may wish to make it easy to identify members, so for singers it is suggested that you type in your name preceded by the 3-letter abbreviation for your voice part in capitals (SOP, ALT, TEN, BAR, BAS) e.g. "TEN Joe Smith" or "SOP Joan Smythe".

- For “Instrument” choose the voice part or instrument that fits you.
- Set your country so that the national flag icon appears correctly by your name.
- Leave the Skill level as “None” for now – other levels change the colour of your name box in the mixing panel which might be confusing when starting out.

Your profile will now look something like this:

Alias/Name	BAS Norm Hall
Instrument	Vocal Bass
Country	United Kingdom
City	
Skill	None
Close	

5. Joining a Server

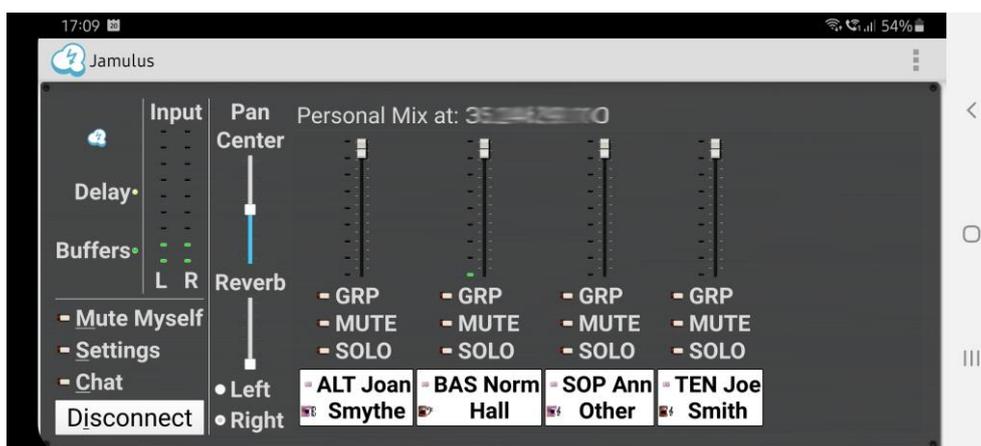
First plug in your Headphones/Headset!

Tap the Connect button on the main Jamulus window. In theory you could join any of the servers listed, anywhere in the world, in any of the “genres”, and join in the music-making with the people already there. By all means try if you like! However, assuming your group has setup a “private” server, you will be given an IP address (a fictitious example is: “33.248.19.110”) to type in to the Server Address field, for instance:

Server Address: 33.248.19.110

Buttons: Cancel, Connect

Once you’ve typed in the IP address, tap the “Connect” button. The Connection setup window will disappear and the Chat window will automatically open – use your “Back” button to dismiss it, returning to the main Jamulus window where you will now be “in the room” with your fellow musicians. Once you’ve connected to your designated server, the “Connect” button changes its name to “Disconnect”, ready for the end of your session. You will see an entry for each person in the room, with a volume slider for each – this is your own personal mixer desk, so you can vary the volume of each person that you hear (but this does NOT affect what other people hear – they each have their own “mix”). Here’s an example of what the window might look like:



6. Your Own Mixer Controls

6.1. Mixing sliders

Each person in the room is allocated to an individual mixing slider. These sliders control the sound that **you** hear – they have no effect on what other people hear. For instance, if a certain tenor is bellowing loudly, just move their slider down to give a more optimal experience for yourself. Or even mute them altogether with the “MUTE” button below their slider. Power!!!

NOTE: To the left of each slider is the volume (loudness) of that person, shown as a set of green lights, with two red lights at the top. If the green lights dance up & down with the occasional single red light in the loud bits, then they are providing a perfect feed to the server, and hence to you. If the second (topmost) red light comes on that means that they are “clipping”, i.e. going beyond the maximum volume. Note that your own slider’s lights reflect your “Input” volume lights, which are the two vertical rows of lights towards the left of the main Jamulus window, with the word “Input” above. Keep an eye on your own “Input” – if it’s too low people will have difficulty hearing you properly, and if it keeps clipping then you’ll sound horrible. Change the distance between your mouth and the mic to control this.

NOTE: At the bottom, under each person’s slider, is their name, the flag of the country they’re in, and an icon representing the instrument/voice they selected in their Profile. The colour of the name box corresponds to the skill level they chose when setting up their profile.

6.2. Pan Dial

There may be a Pan dial above a slider to allow you to change where the person’s sound comes into your headphones. For example, if you’re singing alto in a quartet, you could put the tenor on one side and the soprano on the other. The Pan dial may be very small on Android devices, and is best left alone!

6.3. GRP Button

This allows you to assign a participant to a “Group” (e.g. all Sopranos in Group 1, all Altos in Group 2) so that changing the volume on one of that group changes them all together in one fell swoop.

6.4. Mute Button

Use the Mute button on a person’s slider to mute just that person, just for you. For example, maybe someone with too big a delay is screwing up the tempo for you, in which case you could mute just them to try to stay together. If you’re hearing yourself echoing, you can use the “Mute” button or slider in your own column to remove or reduce the sound of your own voice in your headphones.

6.5. Solo Button

The “Solo” button can be used to listen to just one participant, or a set of participants if each one is set to Solo. If a disruptive sound is coming from somewhere, you could Mute or Solo people one by one till you identify the culprit. It’s also possible to Solo multiple people at once. For example, you might Solo the accompanist and all your colleagues of your voice. The flipside is that you won’t hear anyone else until you either Solo them as well, or turn off ALL of the Solo buttons. Be careful

not to leave Solo on when you're done, because when you return to that room, the program will remember who you previously set to Solo and do it automatically, so you'll have to clear it to hear others. You can clear all previous Solo and Mute decisions with a command under the Edit menu to Clear All Stored Solo settings.

6.6. Mute Myself

The "Mute Myself" button in the bottom left is used to stop sending your sound to the server. Use this when the dog barks, the phone rings, or you have a sneezing fit. This is **NOT** the same as using the Mute button that lives with "your" slider – that merely controls how much of your own voice you hear in your headphones.

7. Other Items on the main Jamulus Window

7.1. Moving people around on the Mixing Desk

To get all the singers of the same part together on the screen, go to Menu => Edit => Sort Users by Instrument. Within a single voice part, the singers are listed in alphabetical order. Other groupings and layouts are available under the Edit command and the "GRP" button described above.

7.2. Delay and Buffer lights

The Delay and Buffer lights tell you how well you'll be able to synchronise with other people in the group. Green is good, yellow is fair, red is bad (but even if it's red, keep going!).

7.3. Other Controls

The "Pan Center" (sic), "Reverb" and "Left/Right" sliders/buttons are best left alone.

7.4. The Chat Window

The Chat window allows the person hosting the server to put in an automated welcome message telling you something about the server. You can also use the chat window to communicate in text with all the participants in the room, as long as they are paying attention to the chat window. Use the "Chat" button in the main Jamulus window to show the chat window. If you send a chat message, it will be visible to anyone in the server, when they open their chat window. There is no private chat with single individuals. Use your "back" button to dismiss the Settings window and return to the main Jamulus window.

7.5. Settings

To view your settings tap the Settings button. In the bottom right of the Settings window the audio stream rate, ping time, and overall delay are displayed, and lights (green, yellow, red) will give an indication of how "good" your "jitter buffer" and "delay" are – your organiser may want you to look at these to help diagnose problems. Use your "back" button to dismiss the Settings window and return to the main Jamulus window.

8. Tips & Hints for Singing in a Jamulus Room

When you're actually singing, try to drive the beat forward, and don't listen for pickups and other people's entrances. If you do try to listen for others, the tempo will just get slower and slower because of the latency.

When singing with a backing track or a human accompanist, make sure you have plenty of volume on their slider, and perhaps a little less on the other singers, as this will help you to stay in sync with the beat (since the beat is being created by the accompaniment).

Try to **not** completely mute your own return sound. Yes, it's annoying to hear your own voice with an echo, but if you can sing ahead of the beat such that your return sound is lining up with everybody else's sound, then you are actually singing in time, because that's what you sound like to everyone else when they're hearing your sound coming to them from Jamulus.

Jamulus on Android has inherent delays and latency, so the above advice is particularly pertinent in this scenario.

And when you're all finished with Jamulus, please remember to click the "Disconnect" button at the bottom left of the main Jamulus window, and close that window (using your "Back" button).