



# **JamKazam**

## **GUIDE FOR CLASSICAL MUSICIANS**

**Revised:  
July 31, 2020**

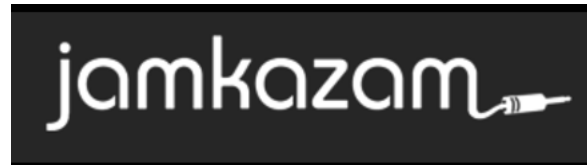
Updates:

- Refined requirements for PC users
- Added instructions for audio gear setup
- Advanced setup instructions to optimize sound quality during a session
- Added settings information in the "Important Information" section

**-DISCLAIMER-**

*This information sheet was commissioned by dell'Arte Opera Ensemble, and prepared by Alonso Jordan Lopez and Ryan Allais. Neither dell'Arte nor the creators of this document make any claims as specialists in the software or take responsibility for recommended software or hardware. Much of the information in this document has been compiled from online forums, techy groups, and first-hand experience with the software. We hope the information that follows will be easy to follow for our fellow classical musicians, and lead to enhanced collaborative possibilities in the coming months.*

**JamKazam** is a software application that allows users who have the ideal hardware and software configurations to have real-time low-latency- “jam” sessions. In the case of the classical musician it is especially useful for coaching sessions and but it has yet to be tested in performance situations.



**-DEFINITIONS**

Low-latency: Reduced delay which allows for an almost real-time online experience.

Audio interface: An audio interface is a piece of hardware that expands and improves the sonic capabilities of a computer. Some audio interfaces give you the ability to connect professional microphones, instruments and other kinds of signals to a computer, and output a variety of signals as well.

Sample Rate: In audio production, a sample rate (or "sampling rate") defines how many times per second a sound is sampled. Technically speaking, it is the frequency of samples used in a digital recording. The standard sample rate used for audio CDs is 44.1 kilohertz (44,100 hertz). The higher the sample rate, the higher frequencies a system can record.

**-MAIN SYSTEM REQUIREMENTS**

As per the JamKazam user forum:

| <b>Mac OSX</b>  | <b>WINDOWS</b>  |
|---|---|
| Mac OS X 10.8 or higher, 64-bit   | Windows 7, 8 or 10, 64-bit (32-bit not supported)   |
| Dual-core processor or higher   | Dual core processor or higher   |
| 75MB hard disk space for app  | 75MB hard disk space for app  |
| External audio interface recommended (but you can start with built-in mic and & headphone jack) | External audio interface recommended (but you can start with built-in mic and & headphone jack) |
| USB 2.0, USB 3.0, Thunderbolt, or Firewire (not USB 1.1) for external audio interfaces          | USB 2.0, USB 3.0, Thunderbolt, or Firewire (not USB 1.1) for external audio interfaces          |
| Ethernet port for real-time online sessions (WiFi not recommended)                              | Ethernet port for real-time online sessions (WiFi not recommended)                              |
| Broadband Internet service with 1Mbps uplink bandwidth for real-time online sessions            | Broadband Internet service with 1Mbps uplink bandwidth for real-time online sessions            |

## -PRE-SETUP/HELPFUL INFORMATION

Having the optimal computing environment to run JamKazam is very important. Aside from the minimum system requirements above, having the right equipment for your computer, drivers, and settings will be integral.

MAC users: JK seems to work with just a good USB mic like the Blue Yeti just about as well as it does with an interface and an XLR mic.

Drivers: The native MAC sound driver, CoreAudio, works well with JK, and so a manufacturer's driver isn't used.

Sample Rates: Use the Audio Midi Setup utility to ensure the equipment/devices you are using (headphone/microphone) have matching sample rates, which is listed under "Format". If the sample rates do not match then you will get a lot of static and feedback. You can find the Audio Midi Setup utility by doing a "Spotlight Search", which is the magnifying glass icon located at the top right of your screen, next to the time.

WINDOWS users: An audio interface, with a compatible XLR-input mic, is virtually obligatory for Windows users. Along with the almost useless WDM driver native to Windows, with an interface, the excellent alternative to WDM is the proprietary ASIO driver offered for download by each interface's manufacturer. Users need to download this driver before plugging in their interface - then, it should work well with JK. (I can think of one exception where the driver provided doesn't work with JK but the driver for a previous version of the same interface does.)

Drivers:

- Ensure "Windows Visual Studio" is up to date:
  - <https://visualstudio.microsoft.com/downloads/>

Samples Rates: You may need to double check Advanced Sound Device settings to ensure sample rates match on the devices you are using.

## -EQUIPMENT

Your 'voice' as a consumer is powerful, so whenever possible, we're only providing links to \*reviews\* of appropriate equipment. Do your research. Exercise the voice of your purchasing power. If you use a USB mic or Zoom recorder, you will not need an audio interface. However, an audio interface with a conventional mic will yield better sound results and improved latency.

- Ethernet connection (MAC & PC)
- Wired headphones (MAC & PC)
- USB Microphone (MAC only, not recommended for PC)

- Audio interface and a conventional pin (XLR) mic, either condenser or old-school like a Shure Beta58 (better quality, less latency)
  - Zoom H4n recorder (as audio interface) (MAC & PC)
- Adapters (MAC & PC)

1.) Ethernet cable

- a. [LINK](#)

2.) Wired Headphones

- a. [LINK](#)

3.) USB Microphone

- a. [LINK](#)

4.) Audio Interface Packages /Zoom H4n

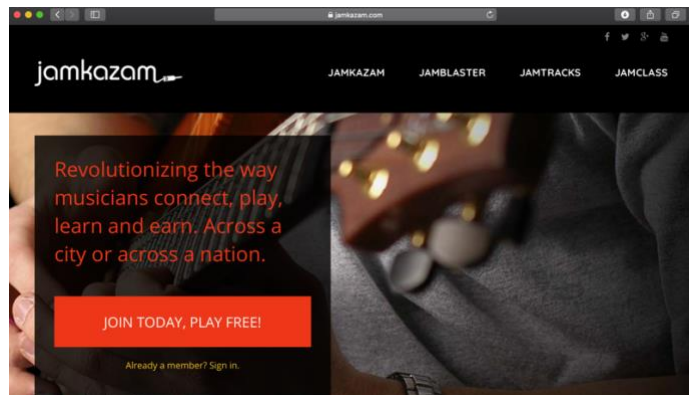
- a. [LINK](#)  
 b. [ZOOM H4N Review](#)

5.) Adapters

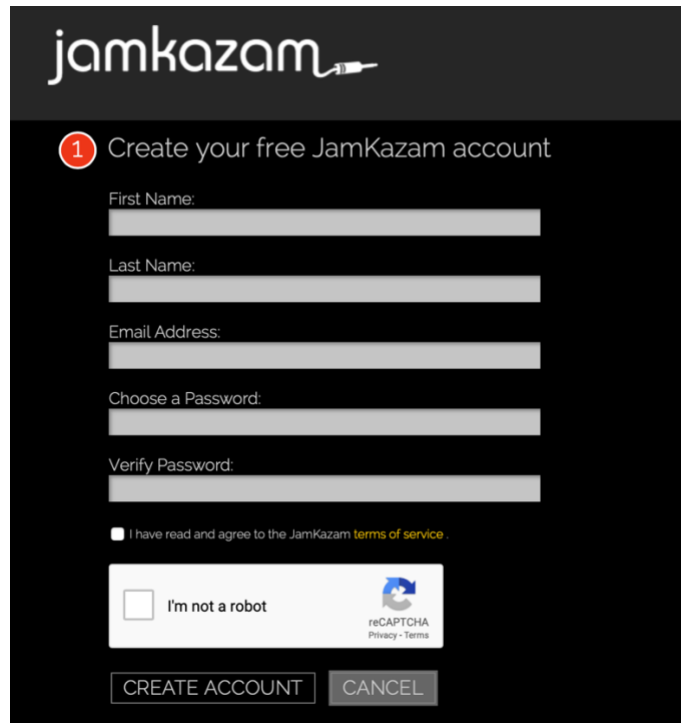
- a. As newer laptop/computer models are released, ports may not be compatible with devices. Be sure you have all the necessary ports for wired headphones, ethernet connection, and audio interface or USB microphone. In some cases an adapter may be needed.

-INSTALLATION

- 1.) Visit [www.jamkazam.com](http://www.jamkazam.com) and click on “JOIN TODAY, PLAY FREE”

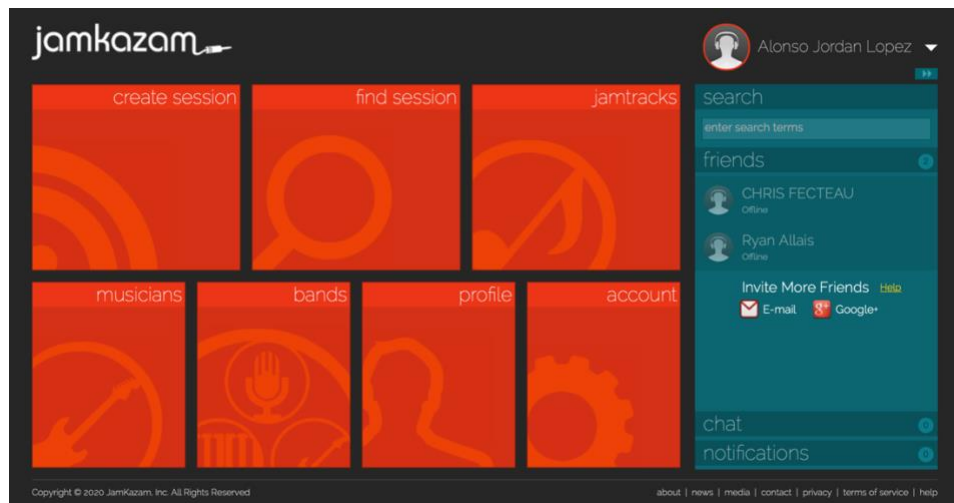


2.) Register for free.

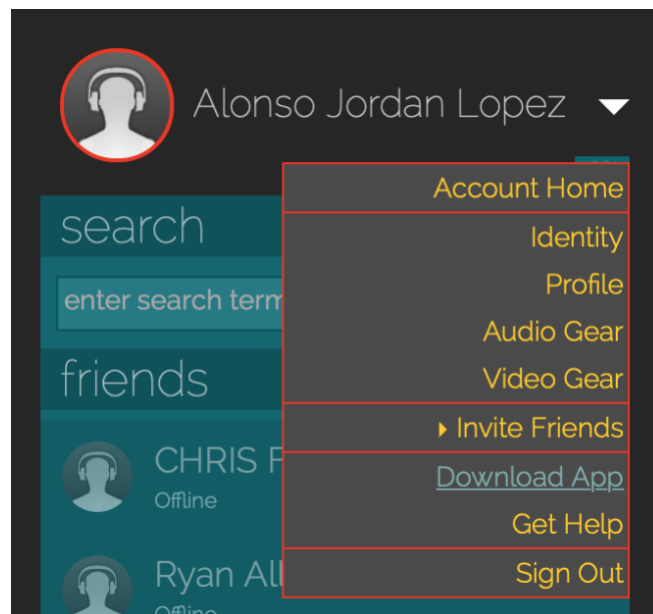


The screenshot shows the registration page for JamKazam. At the top is the JamKazam logo. Below it is a heading "1 Create your free JamKazam account". The form includes fields for "First Name:", "Last Name:", "Email Address:", "Choose a Password:", and "Verify Password:". There is a checkbox for "I have read and agree to the JamKazam terms of service." and a reCAPTCHA widget with the text "I'm not a robot". At the bottom are two buttons: "CREATE ACCOUNT" and "CANCEL".

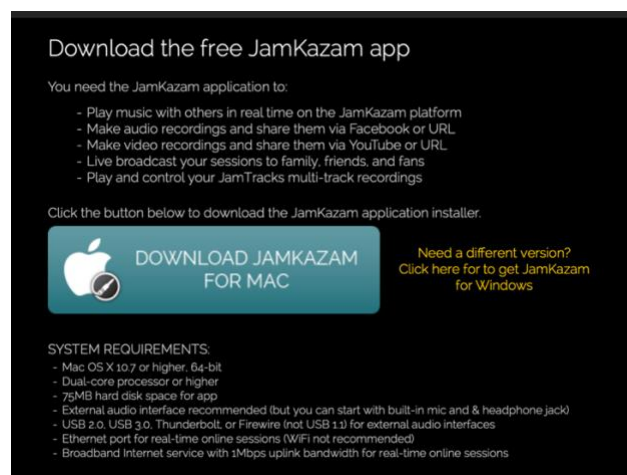
3.) After registering, you will automatically be signed in. If you would like to use the web version without downloading the application, then skip to audio setup. However, in our experience the application works better if downloaded.



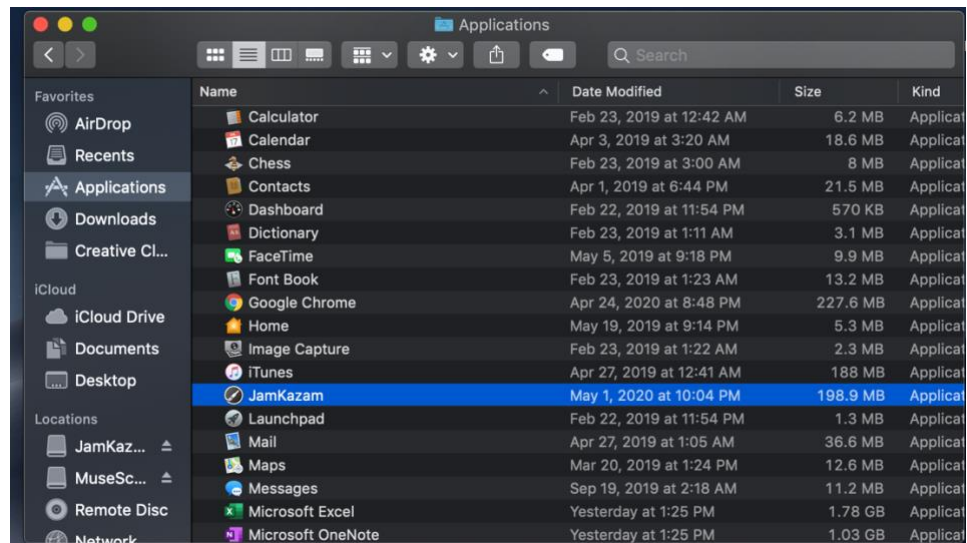
- 4.) Before starting to look at all of the features in the application, download the application by selecting the arrow next to your name and select “Download App” in the drop down menu.



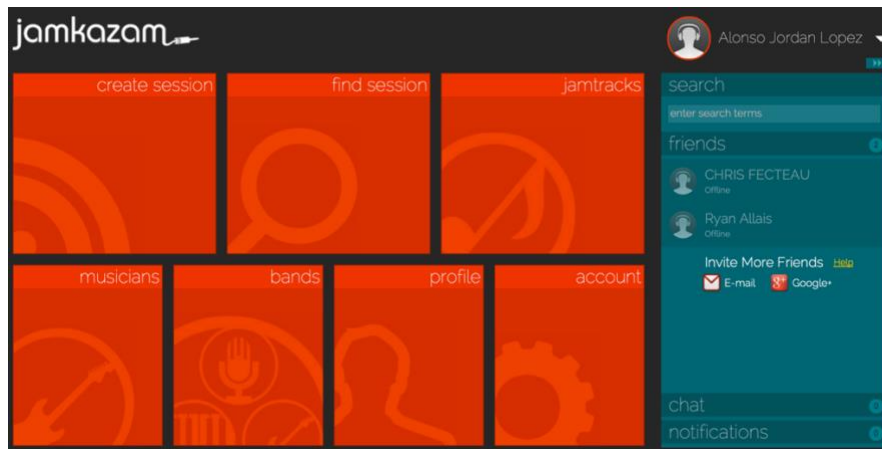
- 5.) You will be automatically directed to a download page that will detect your machine’s specs for you. If you don’t see the correct version for your computer, then select the link that says “Need a different version?...” next to the download link. Download the application and follow the steps on your computer to complete the download.



6.) Find the application in your designated program applications folder on your computer.



7.) Open the application and sign-in with the credentials used when you registered.



## -AUDIO SETUP

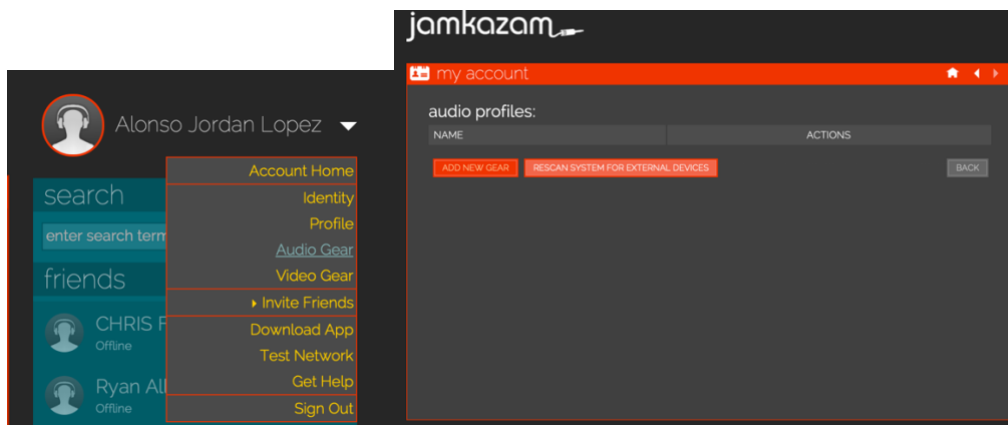
- 8.) Connect your headphones, microphone, and ethernet cable to your router. Be sure once your ethernet cable is connected you turn off WIFI to ensure your computer is accessing network via wired connection.



AUDIO INTERFACE SET-UP- More information to come soon! (If you purchase an audio interface package from Sweetwater, they have excellent tutorials and customer service.

### [ZOOM H4N as an Audio Interface Instructions](#)

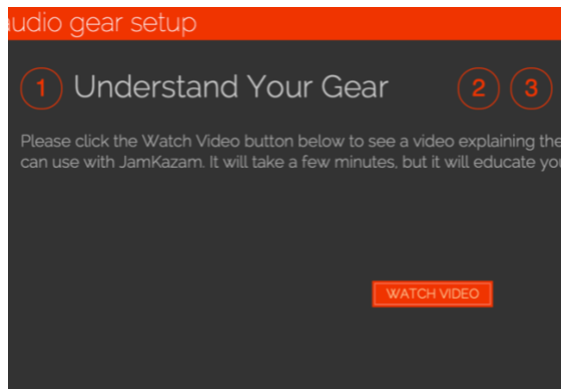
- 9.) On the “homepage” of the application, select the drop-down menu next to your name and select “Audio Gear”. The “audio profiles’ page will open. Select “ADD NEW GEAR”.





10.) You will go through a six step process as follows:

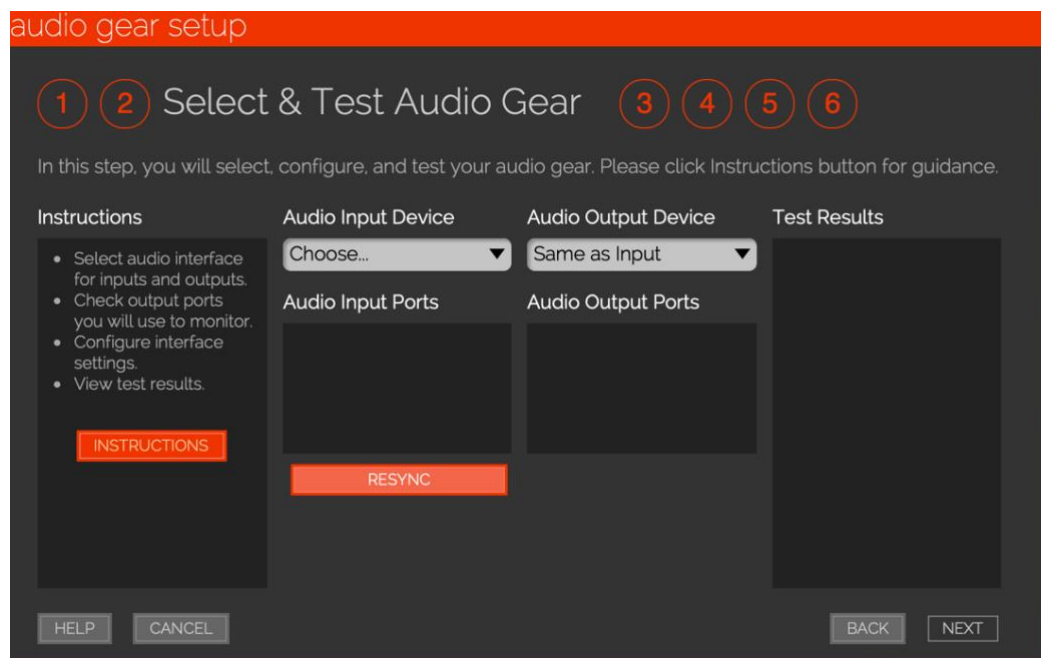
11.) Step 1: Please watch the video for additional guidance on the setup process.



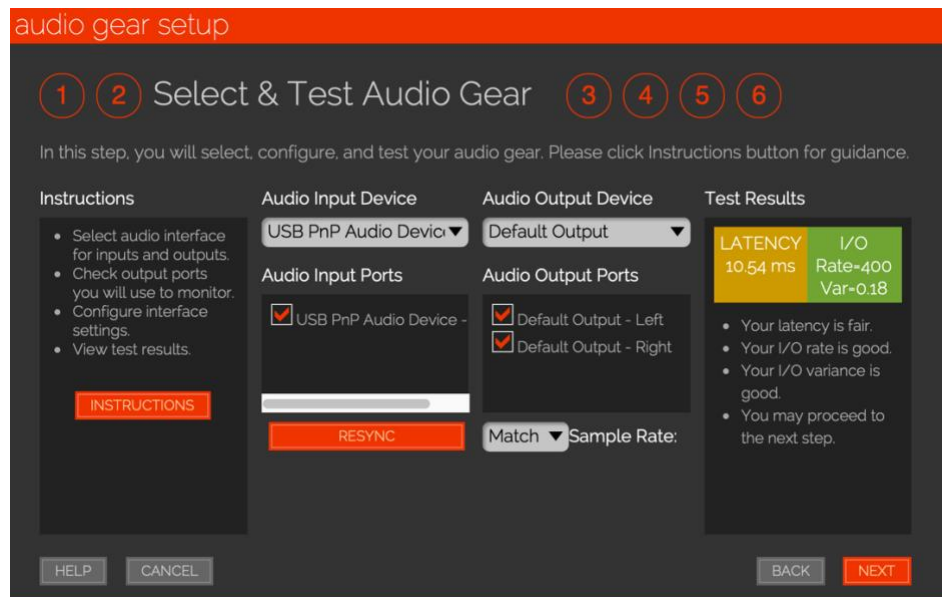
12.) Step 2 is crucial in ensuring that your connection and audio devices are configured for the low latency environment needed.

MAC: In Mac, if you have an interface, the Audio Input will be just the name of the device, and the output will be the same; without an interface, the input will be the name of your microphone and the output will be your default speakers (headphone jack).

WINDOWS: With an audio interface in Windows, the Audio Input to choose will be the ASIO driver specific for your interface, and the Audio Output will be "Same as input".

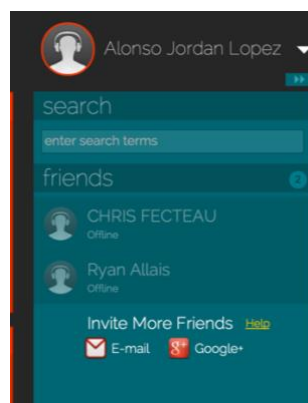


- 13.) Once your devices have been selected, the program will automatically test the connection and latency. You will be able to proceed to the next step if your latency is deemed “fair” or better. However, “good” is ideal. You should now be able to speak into your microphone and hear yourself on your headphones.



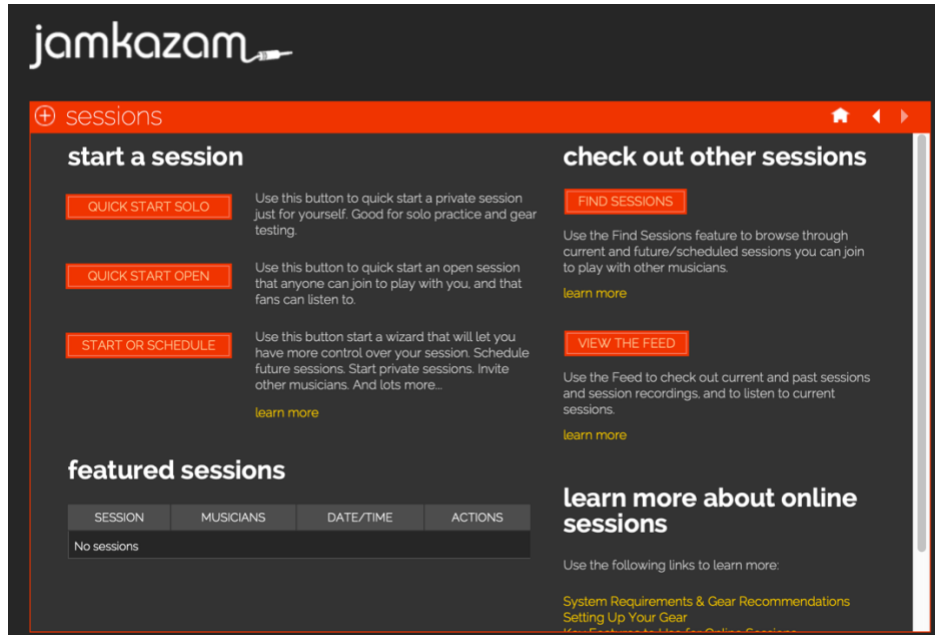
- 14.) For steps 3-6 nothing further needs to be done and you can select next to get to the end of the setup process.

- 15.) On the homepage invite friends to have an easier time creating a session. Invite friends via email and ensure it is the email address that was used to register for JamKazam. You will receive a notification below the “friends” menu when your friend has accepted your invitation.



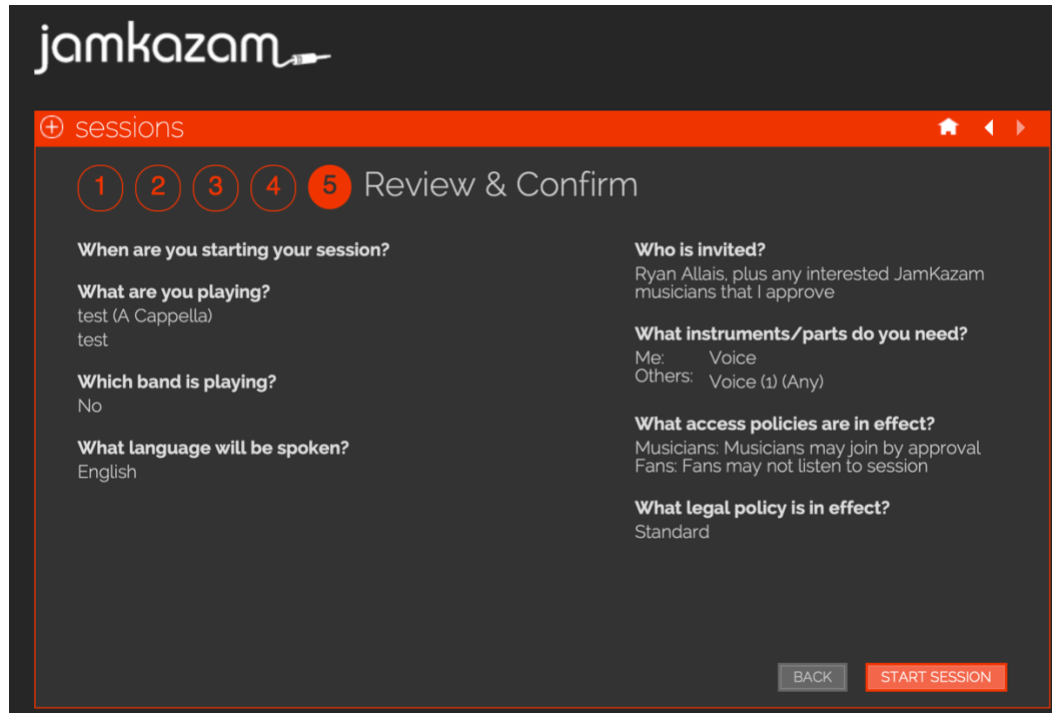
- 16.) On the homepage select “create session”. Follow the highly intuitive instructions for starting a session. The best one to use for our purposes is “Start or Schedule”.

See additional setup options prior to starting your session in the “Advanced Setup” section.



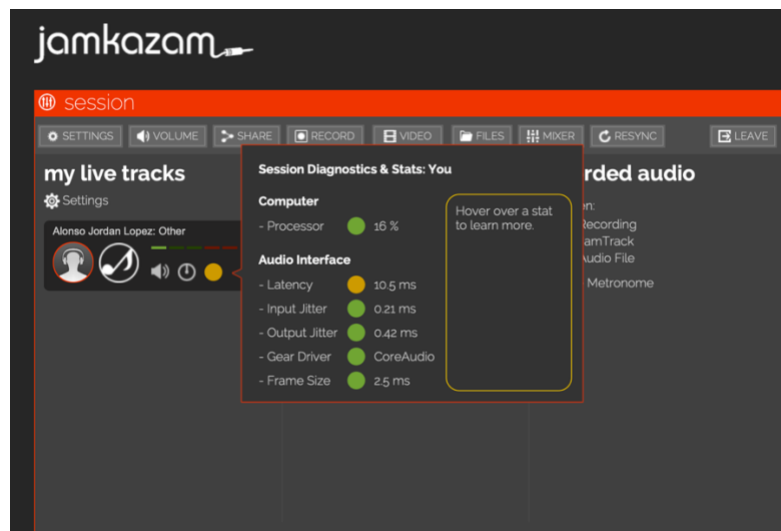
- 17.) You will be guided through another step by step process.

- a. Step 1: Select I want to start a new session right now for others to join. (Another good option is to schedule a session for a specific future time).
- b. Step 2: You must select a genre, and fill in both the title and details of the session.
- c. Step 3: You can invite friends from your friends list. (And this is why it is more convenient to invite friends first).
- d. Step 4: Select the standard legal agreement, and select your preferences for how musicians can access. Please note that by musicians, it means all musicians on JamKazam currently.
  - i. Ideal preferences for a one-on-one coaching: “Musicians may join by approval” and “Fans may not listen to session”
- e. Step 5: Review and confirm.
- f. The screenshot below shows step five which includes all of the settings listed above.



18.) You are now ready to start your session. All participants will appear in the session screen. You can start a video which will access your webcam. Hovering your mouse over the colored circle next to the volume controls will provide “diagnostics”. Green is good, yellow is okay, red is bad.

Once in a session, it's important for each user to check the volume faders for him/herself and for other musicians in order to set their personal mix.



## -ADVANCED SETUP

- 1.) Go to Manage / Audio Settings / Audio Booster and choose the lowest settings you can while maintaining acceptable audio quality for Outgoing Audio Bitrate (128 Kbps if possible, otherwise 256 or even 320) and Audio Frame Size. (I use 1ms whenever possible, and never higher than 2.5.)
- 2.) Leave the "Auto Throttle" boxes checked for both bitrate and packet rate. In all of these cases, the lowest settings have the potential for decreasing the latency at the possible cost of audio quality. If the internet connection is fast, it's worth pushing the settings aggressively low at first; if pops, clicks and dropouts creep in, then you can tinker with raising a setting to see if it solves the problem.

## -IMPORTANT INFORMATION

- 1.) Low Latency – is not a guarantee. Based on forums on Facebook and on the JamKazam page, it is virtually impossible to have 0.0 ms latency.
  - a. Distance plays a factor in the latency, and users on forums state that there is a considerable decline in latency in distances of 1,000 miles or more. However, there are other factors at hand even in distances much closer.
  - b. Timing matters – internet traffic levels play a factor in latency.
  - c. Video – may interfere with latency, so off might be ideal, but it's inconsistent to know how much it interferes.
  - d. Ensure the Wifi connection is turned off so it doesn't interfere with the Ethernet connection.
- 2.) Packet rate issues: As of late there have been pop-up messages regarding packet rates. While the above "Advanced Setup" section advises to keep the "auto throttle" boxes checked, some troubleshooting advice has been to uncheck the boxes and lowering the throttle rates. We will keep monitoring this issue.
- 3.) Sample Rates (edited June 2020) "Symptoms" of sample rate issues is a distortion or heavy feedback, as well as high latency (bad).
  - a. In most cases sample rates will automatically be detected and match when using an audio interface because of the software and drivers that come with the equipment.
    - i. When using the Focusrite Scarlett brand audio interface a helpful tip has been to set the interface's sample rate at 96 khz. This was recently tested by a new user to JamKazam.
  - b. One example when sample rates need to be observed when using a USB microphone, and the input sample rate matching with the output rate of wired headphones.

- i. In Windows: Control Panel - Sound - pick your device - Advanced - Set Default rate when running in Shared Mode. Then disable exclusive mode. You should be able to tell what sample rates each input and output device is operating at and match them manually. This will prevent feedback and static.
- ii. In MAC: Do a Spotlight Search for "Audio Midi Setup". You will be able to switch between input and output devices and change the sample rates to match.

### Hardship Subsidy

If purchase of basic equipment is a hardship, please email [CFilto@gmail.com](mailto:CFilto@gmail.com) for possible subsidies from dell'Arte Opera Ensemble for current roster artists and recent alumni.

### Assistance from Alonso

For technical assistance please email [alonzojordanlopez@gmail.com](mailto:alonzojordanlopez@gmail.com) and provide your name, number, and a good time to reach you. In addition, please include questions and/or the specific subject you want help with. This includes doing additional research for your specific equipment needs.

FEE: \$25 per cumulative call time longer than 10 minutes, up to 1 hour.  
\$15 extra for each additional hour