

# Optimizing for Jamkazam

Hopefully this helps someone. I've been using JK on and off for a year trying to optimize with my co-writer who is 210 miles away. Today for the first time we achieved 19ms, which is absolutely workable. Here are the must knows:

- a solid interface is critical. Look for zero latency devices. They aren't truly zero latency but are close enough to claim it. Presonus audiobox got me to 6ms, presonus 1824c (my studio unit) got me to 4ms. Every bit counts in this game. You usually get what you pay for. If you have a lightning port interface you may be able to shave an extra 2-4ms as those negate the sticky issue of USB buffers. Remember- every member of the session needs gear this good ideally.
- internet connectivity. Do not use WiFi, Ethernet only. Your download and upload speed are not as critical as you would think - a 25/25 connection is plenty. The problem is your provider and how much network jitter their infra introduces. I am on fios and have great stability. My friend is on cox in CT and he has 300mbps down, 50 up, but the jitter was through the roof. A recent change by his provider solved the issue. Stability is key, both inside and outside your house. Also, make sure you open the proper UDP ports in your firewall for your computers IP.
- your PC. An i7 or equivalent is recommended here, especially if you are using VST instruments and/or effects.
- don't share your interface with windows. Set your PC sound device to the internal sound card or something else. Make sure exclusive is checked in sound properties to allow JK to hold the interface dedicated to itself. This is in the properties for the sound device in windows.
- push JK to the limit. Set your frame size to 1ms. If your gear can handle it, this will save quite a bit if all users do it. Expect occasional choppy audio, but sync will be better overall.

One more tip - remember that the timekeeper has a double latency issue. If you have a drummer, they are playing a rhythm that other musicians respond to (one trip of latency), then that persons audio has to come back to the drummer (another trip of latency). As a result, the drummer will feel twice the effect and have a tendency to drift down in tempo. The lowest latency possible will avoid this. Sacrifice audio quality for latency so you can all play in sync.

Cantabile users, or other software users - use two interfaces, one for JK, one for your instrument software. Run cables from out to the input for JK. This keeps the interface dedicated to JK and reduces potential jitter and dropouts local to your pc.