Startup Guide

Lab Streaming Layer (LSL)

v 1.1.9

September 2023

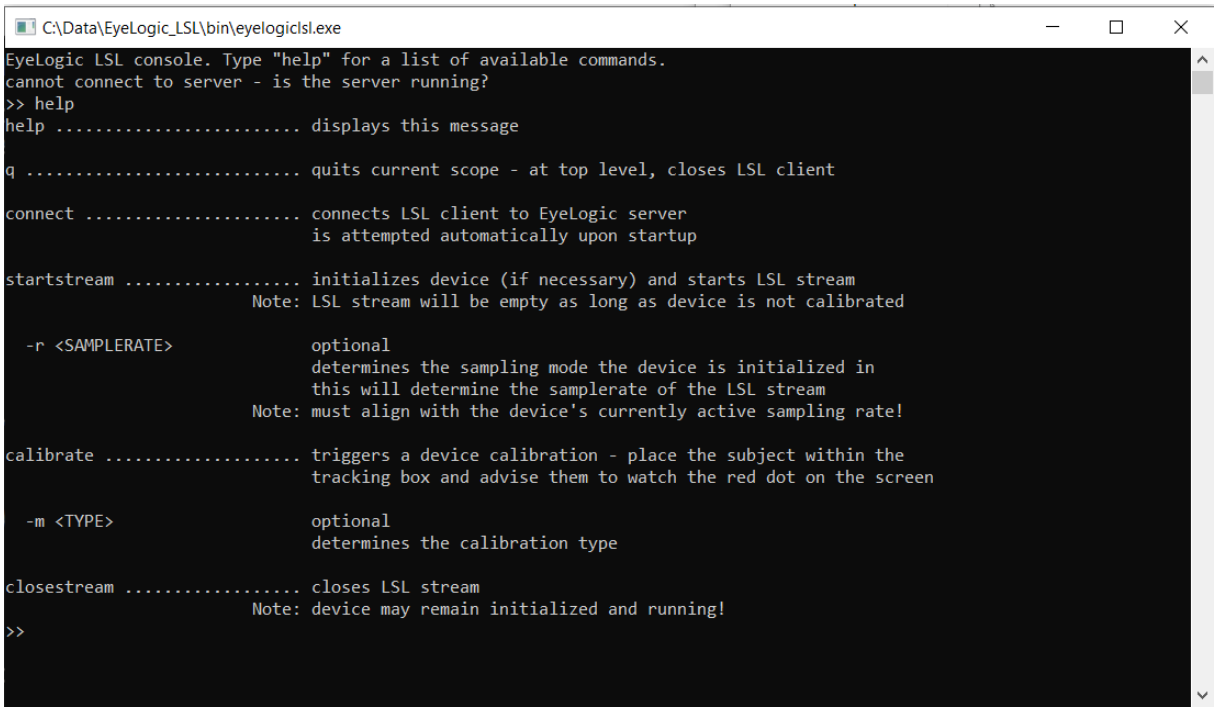
Tutorial

This is a manual on how to use the EyeLogic integration into Lab Streaming Layer (LSL) from the Swartz Center for Computational Neuroscience. LSL allows researchers to synchronize streaming data across devices. The actual EyeLogic-LSL-addon package includes a client which provides an LSL stream containing data from EyeLogic devices. It has a simple command line interface through which you can easily set up the LSL stream.

Start EyeLogic-LSL

To start the EyeLogic-LSL streaming client, just execute eyelogiclsl.exe.

Using EyeLogic-LSL



EyeLogic-LSL envelops a short list of commands which can be listed with the `help` command, the output of which is shown in the above figure.

This guide will go through an ideal setup scenario. If you encounter any typical errors along the way the error messages should point you towards fixing your issue.

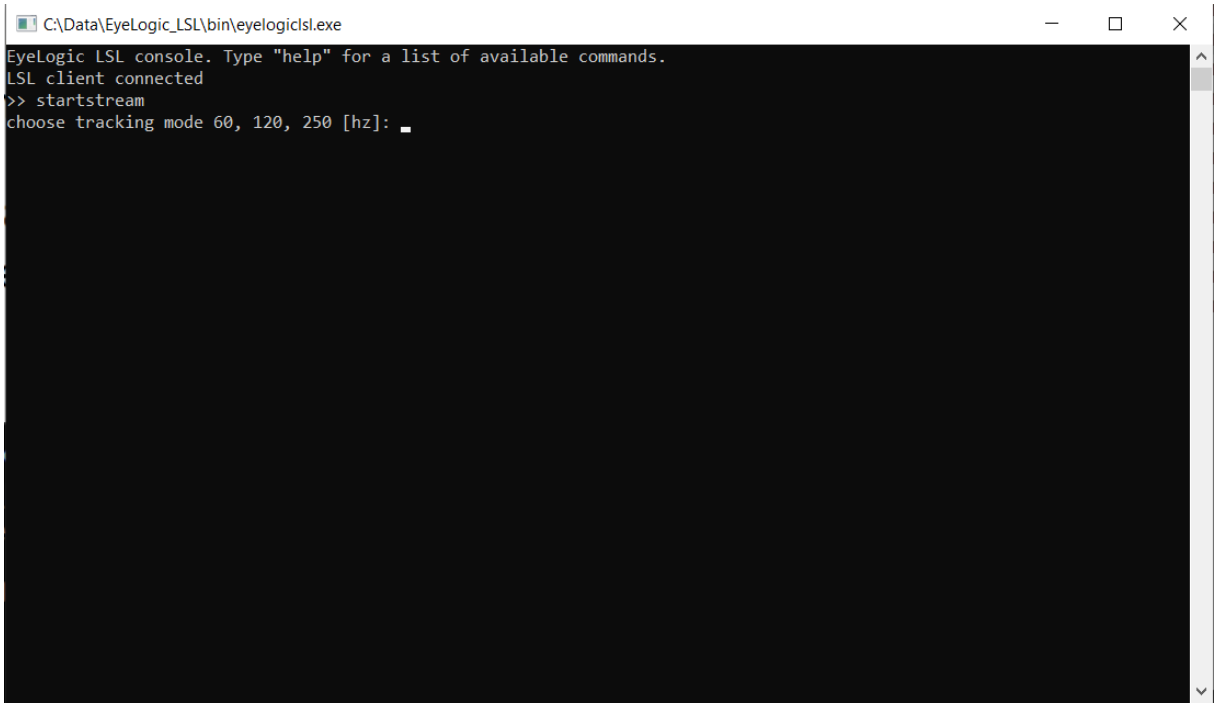
Connect to the EyeLogic Server

Upon opening up EyeLogic-LSL will attempt to connect to your EyeLogic server.[1] However, a running EyeLogic server is not necessary to start EyeLogic-LSL. Whenever you start EyeLogic-LSL before the server or EyeLogic-LSL becomes disconnected for whatever reason, you can connect EyeLogic-LSL with a running EyeLogic server through the `connect` command. Disconnecting the client is possible server-side or by closing EyeLogic-LSL.

Note: In order to initialize a an LSL stream with valid gaze data, it is important that your EyeLogic device is calibrated. Without a calibration your data stream will contain only invalid **Point Of Regard (POR)** data.

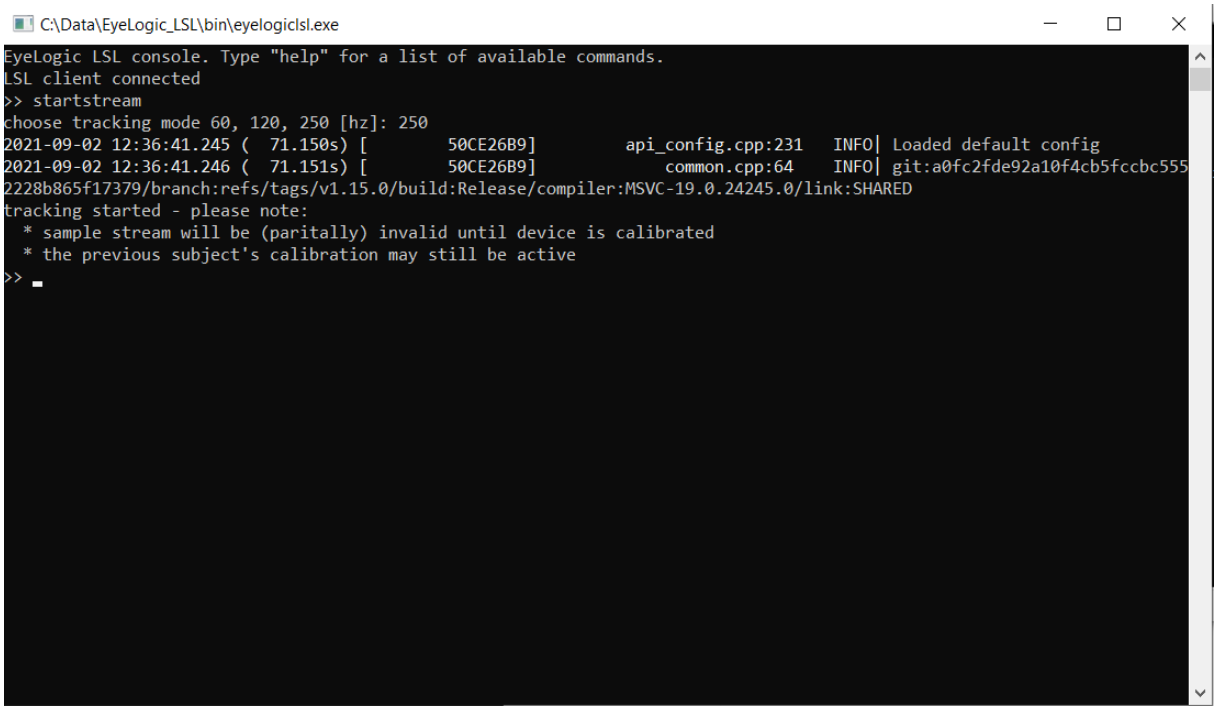
Start the LSL Stream

When not being passed a samplerate through the `-r <rate>` option EyeLogic-LSL will list all available rates and prompt you to input a rate of your choice:



Upon successfully starting the LSL stream you can expect some LSL internal print outs equivalent to those:

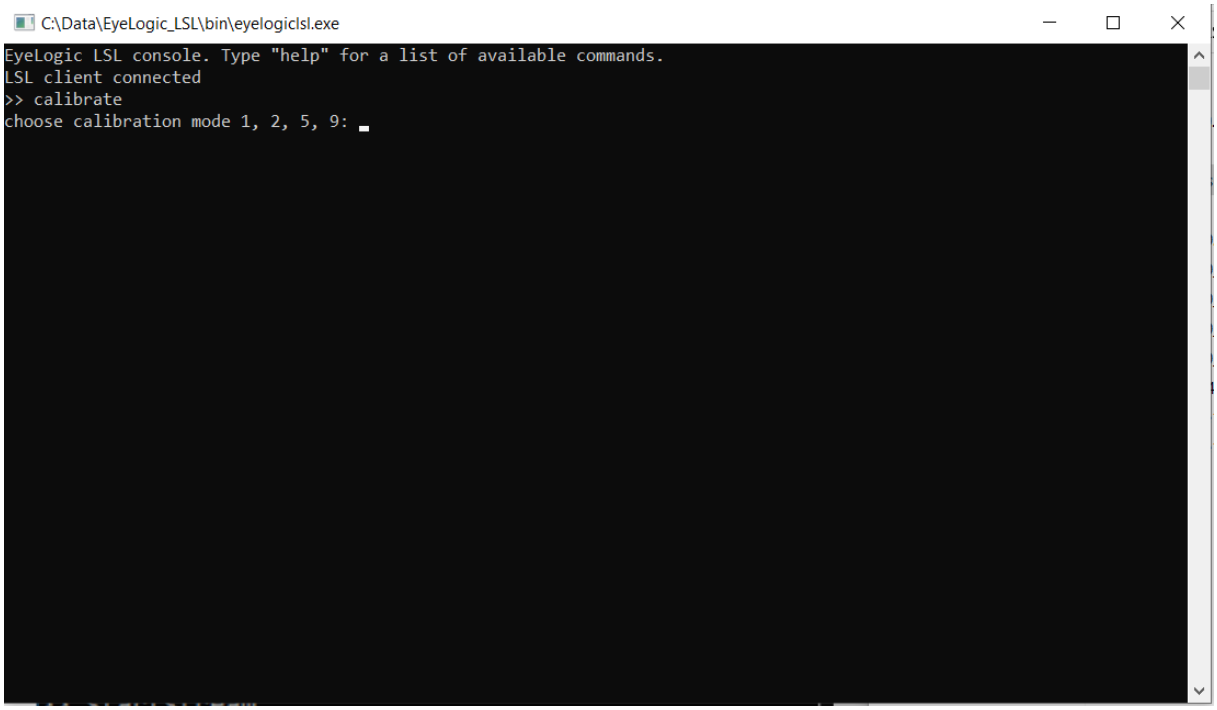
[1] The EyeLogic server must be acquired separately. Consult the respective quick start guide on how to get your EyeLogic server running.



You have now opened your LSL stream, however your device may yet be uncalibrated. Before calibrating the device, it will only deliver invalid POR data (which is marked as ”Not-A-Number”/NAN).

Calibrate the Device

Once the client is in streaming mode you may initialize a calibration of your choice through the `calibrate` command. Equivalently to before, when called without `-m <mode>` option, EyeLogic-LSL will list all available calibration modes and prompt you to input your desired calibration mode:



ATTENTION: Due to the vital importance of this fact it must be again stressed, that each calibration is subject-specific. For each new test subject you will need to re-calibrate the device.

About

EyeLogic GmbH
Schlesische Straße 28
D-10997 Berlin
Germany

Phone: +49 30 9841 9241
Mail: info@eyelogicsolutions.com
Web: https://www.eyelogicsolutions.com