







# Using the Leap Motion Control Panel

This article describes the Leap Motion Control Panel, which you use to set the available options for your Leap Motion Controller.

## Overview

When the the Leap Motion control panel application is running, it displays an icon in the notification area of the Windows Taskbar or Mac Finder bar. When the Leap Motion controller is plugged in and working properly, the icon turns green. Other colors indicate errors and abnormal operating conditions:

-  — the Leap Motion controller is unplugged (or the Leap Motion software hasn't detected it yet).
-  — the Leap Motion controller and software are operating normally.
-  — indicates that a smudge or other contamination might be clouding the Leap Motion Controller sensor window.
-  — indicates that tracking has been suspended because the Leap Motion frame rate is below the acceptable threshold. USB bandwidth contention is the primary correctable cause of poor performance and can often be resolved by plugging the Leap Motion controller into a different USB port, plugging the controller directly into the computer rather than using USB hubs or extender cables, or removing other USB devices.
-  — indicates that the Leap Motion frame rate is below the acceptable threshold and you have turned off the *Avoid Poor Performance* option in the Leap Motion Control Panel. Tracking continues with greatly reduced reliability.
-  — indicates that an update is available for the Leap Motion software. Open the Leap Motion Control Panel to install the update.

The Leap Motion control panel application icon menu provides the following commands:

- Settings... — Opens the Leap Motion Control Panel.
- Visualizer... — launches the (consumer-oriented) Visualizer application.
- Pause/Resume Tracking — Stops/Resumes the production of Leap Motion tracking data.

## Leap Motion Settings

You can adjust the behavior of the Leap Motion system and perform diagnostic checks using the Leap Motion Control Panel. Open the control panel using the *Settings...* command of the icon menu.

### General settings

The General page of the Leap Motion Control Panel provides the following settings:

Check the *Allow Web Apps* checkbox to turn on the WebSocket server that provides tracking data to web applications. (It is possible for other applications to connect to the WebSocket server, so turning this setting off could affect a few desktop applications as well.)

Check *Allow Background Apps* to permit applications to receive tracking data when they are not the foreground, focused application.

Check *Allow Images* to permit applications to receive infrared camera images from the Leap Motion hardware. If unchecked, applications continue to receive tracking data (hand, finger, tool positions, etc), but not the camera images.

Check *Automatic Power Saving* to allow the Leap Motion software to reduce power usage by adjusting the tracking frame rate based on the amount of movement in the field of view. Power saving is always used when a computer is running on battery power.

Check *Send Usage Data* to send anonymous usage statistics to Leap Motion

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Check *Launch on Startup* to launch the control panel application when your computer starts up.

Check *Automatic Interaction Height* to allow the Leap Motion software to adjust the height of the interaction box automatically. This setting affects the *InteractionBox* class provided by the Leap Motion API. Adjust the *Interaction Height* slider to manually set the interaction box height.

Check *Automatically Install Updates* to allow the Leap Motion software to automatically download and install software updates. An update is installed when you restart your computer. Click *Install Update* to install an available update immediately.

## Tracking settings

Check *Robust Mode* to enable the software to enter the “Robust Tracking mode,” which allows tracking to perform better in bright IR lighting conditions.

Check *Auto-orient Tracking* to allow the device to flip the z axis when it detects a hand entering the field of view from the opposite side. Click the *Reverse Orientation* button to flip the axis manually.

### Robust tracking mode

The *Robust Mode* improves the reliability of the tracking data in bright lighting conditions. Robust mode allows the Leap Motion Controller to operate in a wider range of environmental conditions; however, other performance characteristics may be reduced. The main effects on performance are that there will be increased processing latency and very fast motions by the user will cause a loss of tracking data.

The Leap Motion Controller automatically drops into robust mode when lighting conditions become poor and will remain in robust mode for at least 30 seconds.

## Troubleshooting

Click *Show Software Log* to view events related to the Leap Motion system. If you are having problems, we may ask you to save the log and send it to [Leap Motion](#) to help us assess the problem. You can save the log by copying the contents of the log window to an email or text document.

Click *Diagnostic Visualizer* to open the Visualizer application.

Click *Report Software Issue* to open the bug report form. See [Reporting bugs](#) for information.

Click *Restore Default Settings* to revert all of the Leap Motion settings to their original values.

Check the *Low Resource Mode* checkbox to reduce the CPU and USB bandwidth used by the Leap Motion Controller and software. This setting may reduce maximum tracking range, speed, and accuracy, but may be necessary on computers with congested USB busses (from multiple USB and Bluetooth devices) or lower-rated CPU chips.

Uncheck *Avoid Poor Performance* to disable the low device frame rate check. The frame rate check pauses tracking when low device frame rates are detected so that you can take corrective action. When you disable this option, tracking is not paused. USB bandwidth problems are the most common cause of low device frame rate, but overall CPU load can contribute as well, especially on computers near or below our minimum recommended [system requirements](#).

Click *Recalibrate Device* to start the device calibration utility. See [Recalibration](#) for information.

## Recalibration

<iframe width="560" height="315" src="https://www.youtube.com/embed/AXHH-QXqzI" frameborder="0" allowfullscreen></iframe>

If the sensors on the Leap Motion controller are knocked out of their initial alignment, the device must be recalibrated. Symptoms that may indicate the need to recalibrate include:

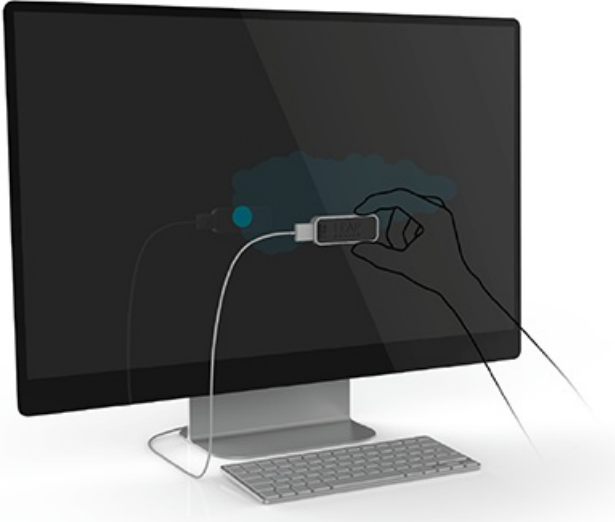
- Persistent jumpiness
- Frequent discontinuities in the tracking data
- Aberrations in tracking data that occur only in certain areas of the field of view
- Poor tracking range

You can look for these symptoms using the the [Leap Motion Visualizer](#).

We also recommend recalibration, using a mirror, if you mount your Leap Motion controller under a piece of glass or other IR-transparent material.


To recalibrate your Leap Motion controller:


1. Open the Leap Motion Settings application using the icon menu on the Windows Taskbar or Mac Finder bar.
2. Select the Troubleshooting page.
3. Click the *Recalibrate Device* button.
4. Follow the on-screen instructions to perform the calibration procedure.



*You will need a flat, reflective surface. A mirror is ideal, but many other reflective surfaces like a flat screen monitor will work acceptably as well. During the procedure, hold the Leap Motion Controller so that the LEDs shine on the reflective surface and are reflected back into the top of the device. The calibration window displays a disk that moves as you change the angle between the surface and the device. Move side-to-side and up-and-down while rotating the controller to move this disk so that it “paints” the window. A score of 80 is acceptable, but a score of 90 or more is ideal.*

## Reporting bugs

If you are having problems with the Leap Motion software or hardware, please contact us so we can help you resolve the issue. You can submit reports on the [Leap Motion](#)  Developer Portal or by using the Bug Report form of the Leap Motion application.


We may ask you to reproduce the issue on your device and record some diagnostic information which you can send to [Leap Motion](#)  to help us assess the problem. You can start and stop the recording of diagnostic information from the Leap Motion Bug Report form. The data is compressed and encrypted and is not useful for your local application debugging. The data recorded can grow large over time, so we do not recommend recording diagnostics for an extended period.

To report a bug,

1. Open the Leap Motion Settings dialog using the icon menu on the Windows Taskbar or Mac Finder bar.
2. Select the Troubleshooting page.
3. Click the **Report Software Issue** button.
4. On the Bug Report form, select the reason that best fits your bug from the Reason drop-down list.
5. Add any important details, such as how to reproduce your bug in the Details section.
6. For some types of bugs, you will be asked to record diagnostic information.
7. When finished, click the Send Issue Report button. Your bug information and recorded diagnostics will be sent to Leap Motion.

If you are asked to record diagnostic information,

1. Press the *Record* button.
2. Reproduce the problem (it may help to have the [Leap Motion Visualizer](#) running).

3. Press the *Stop* button after a short period of time.
4. Click *Send* to upload the diagnostic file to [Leap Motion](#)  for analysis.

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