Finch Unity SDK

Setup and user guide

v1.0.1

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1. Introduction

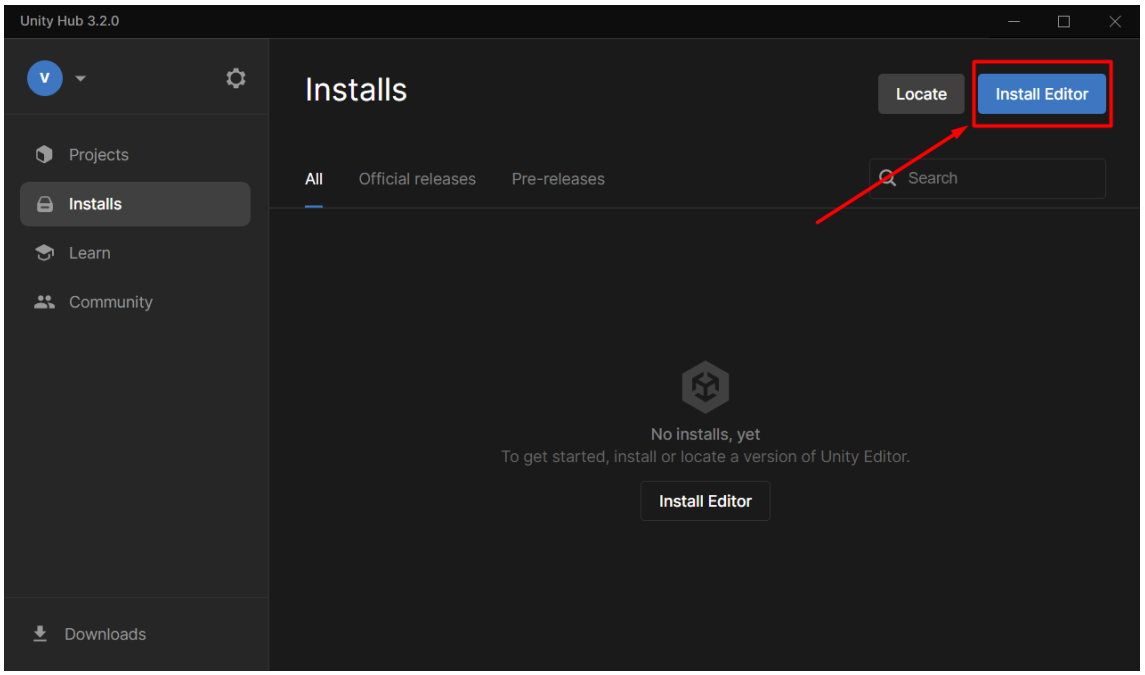
This document describes the setup and configuration of the Finch Unity SDK v1.0.1 to use with FinchShift v1.0 controllers. For the Developer's guide please go to the zip-archive in the shared folder.

If you have any questions or issues, please contact Yana Gabdullina yg@finchxr.com.

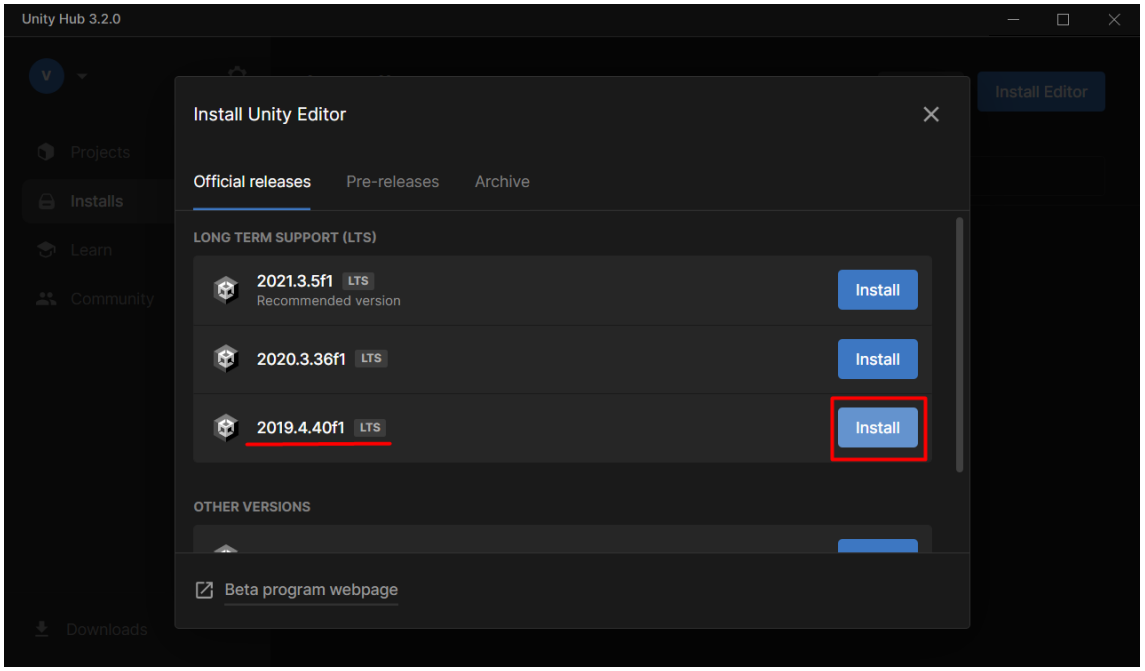
2. Installation

To use Finch Unity SDK you need to install the required software components (Unity 2019).

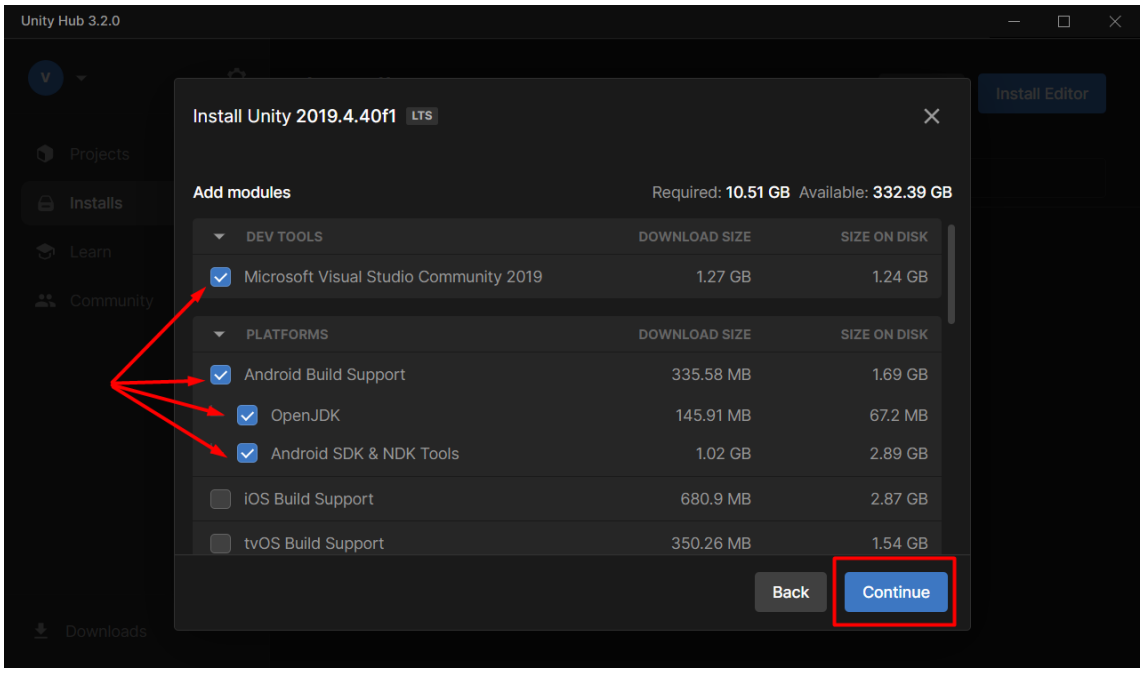
1. Download, install and launch Unity Hub.
2. Open Unity Hub, click **Installs** and launch **Install Editor**.



3. Select Unity **2019.4.40f1 (LTS)** or newer patch of **Unity 2019.4** only (i.e. Unity 2019.4.xxxx) and click **Install.**



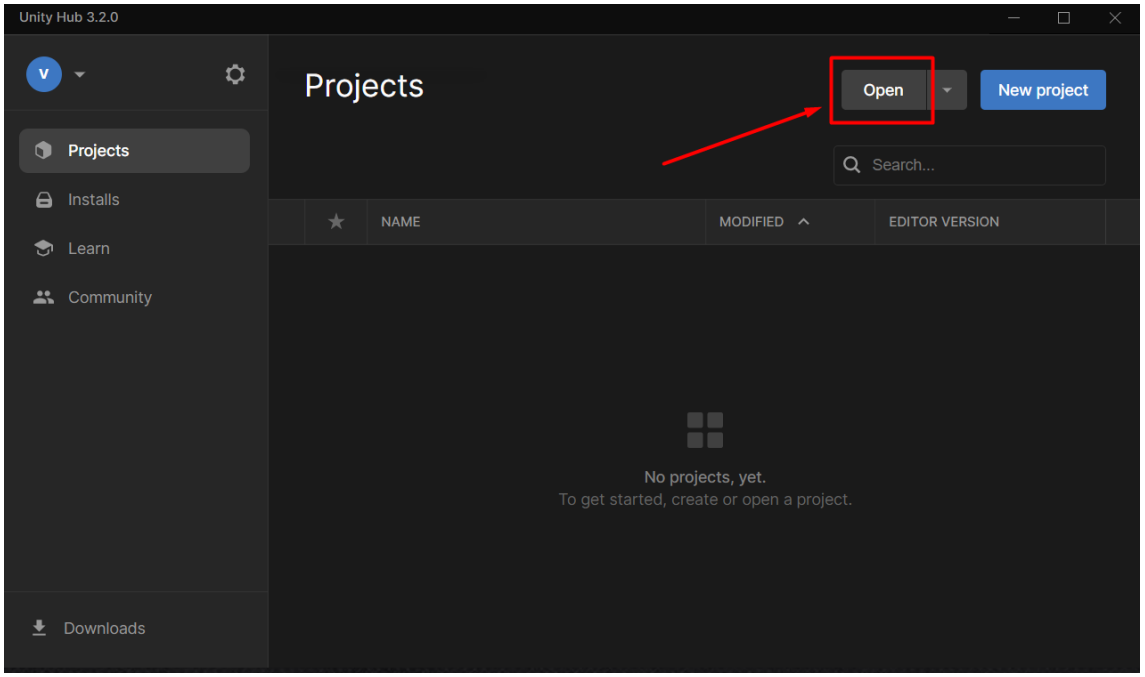
4. Select **Microsoft Visual Studio Community 2019** and **Android Build Support**, click **Continue**.



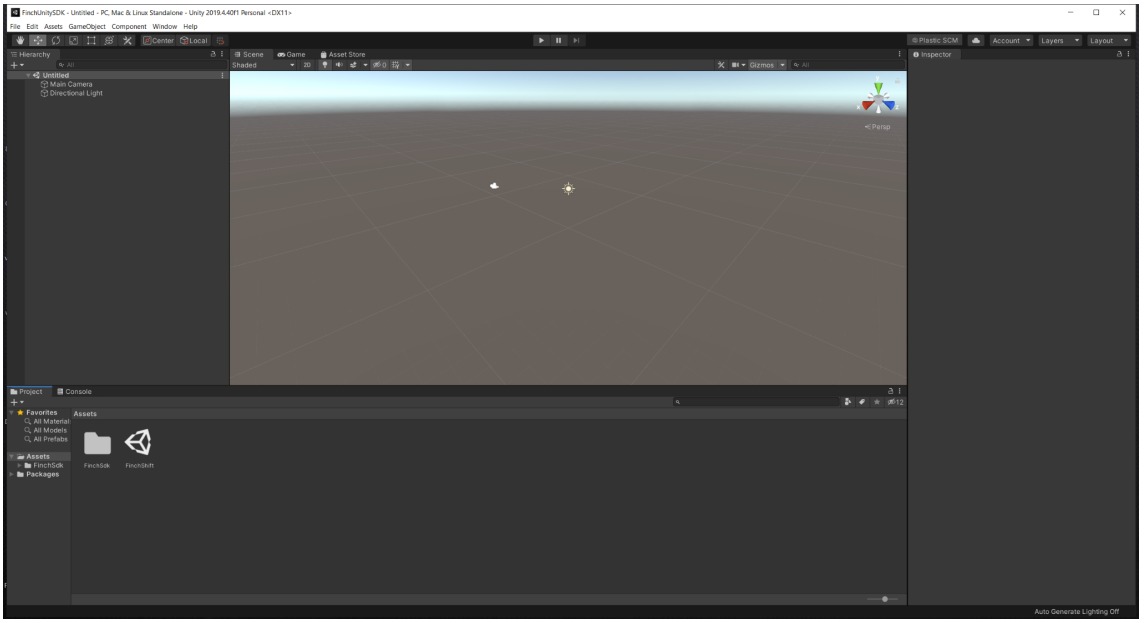
5. Wait for the installation process to finish.

3. Preparing the project

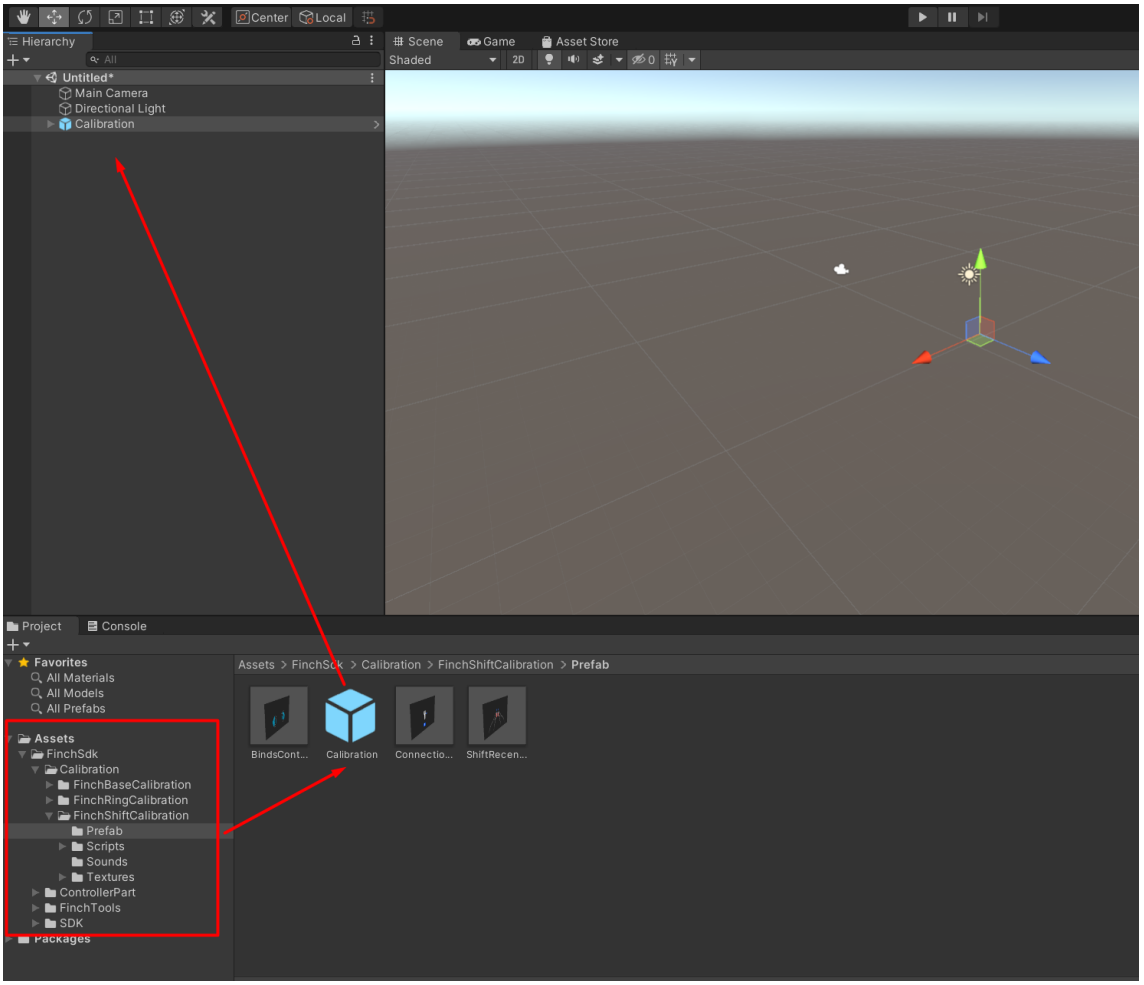
1. Open Unity Hub and press the **Open** button.



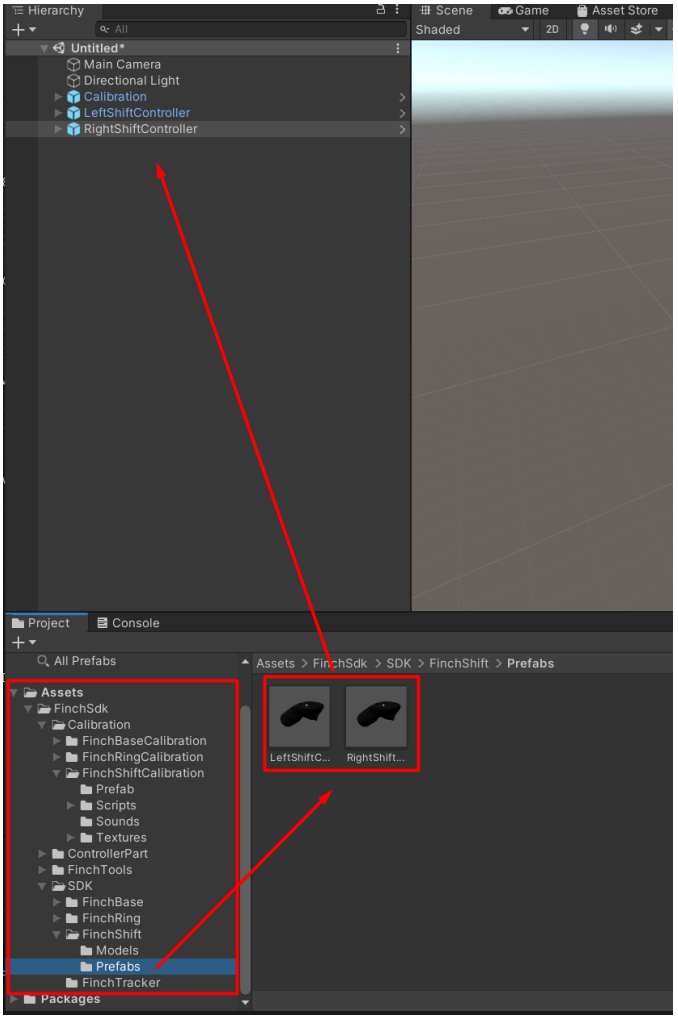
2. Select the folder with the Unity SDK project and open it.



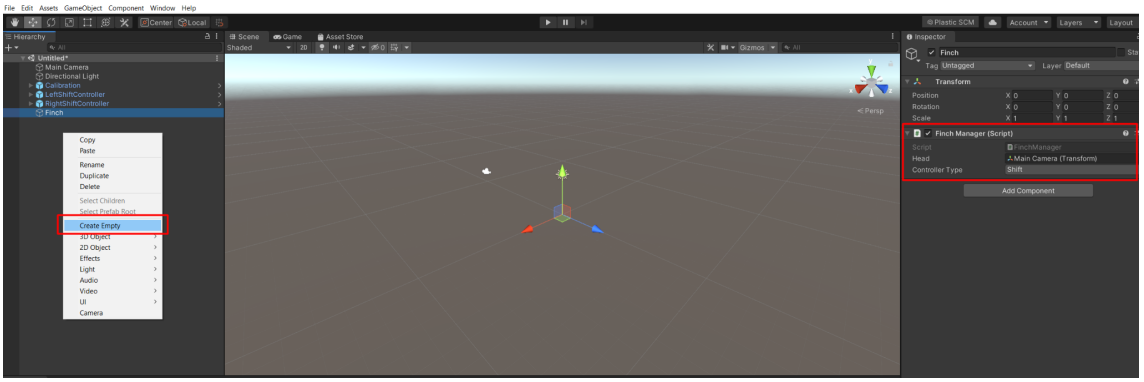
3. Drag and drop the “Calibration” prefab to the Hierarchy window.



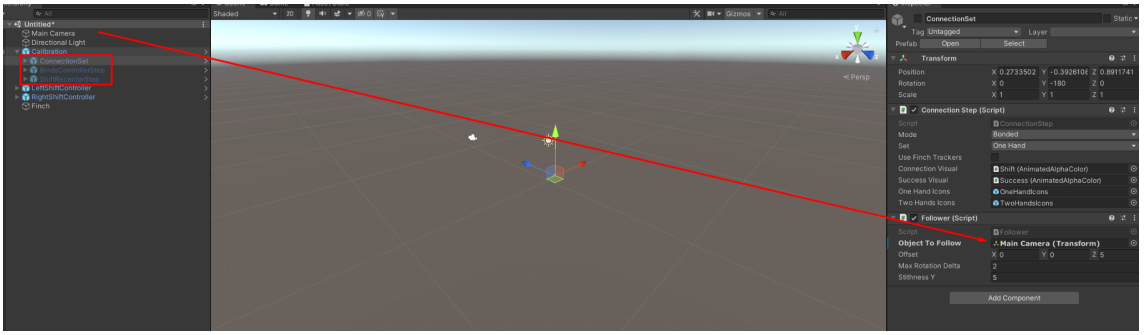
4. Drag and drop the “LeftShiftController” and “RightShiftController” prefabs to the Hierarchy window.



5. Press the right button in the Hierarchy window and press “Create Empty” to create a new GameObject.
   Add the “Finch Manager” component.
   Choose the “Shift” Controller Type.
   Drag and drop the “Main camera” scene to the Head.



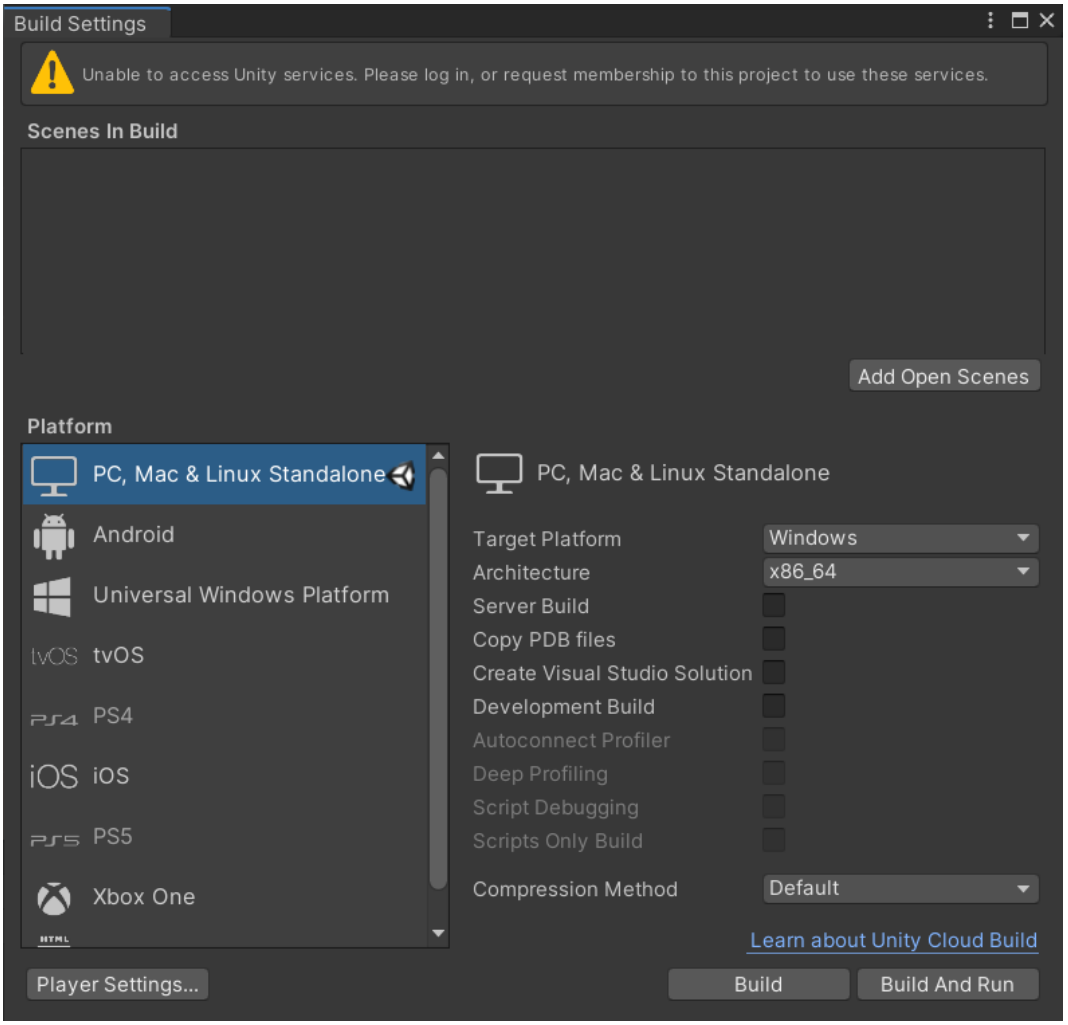
6. In the “Calibration” prefab for each prefab included (ConnectionSet, BindsControllerStep and ShiftRecenterStep) add “Main camera” to the follower script (“Object to follow”):



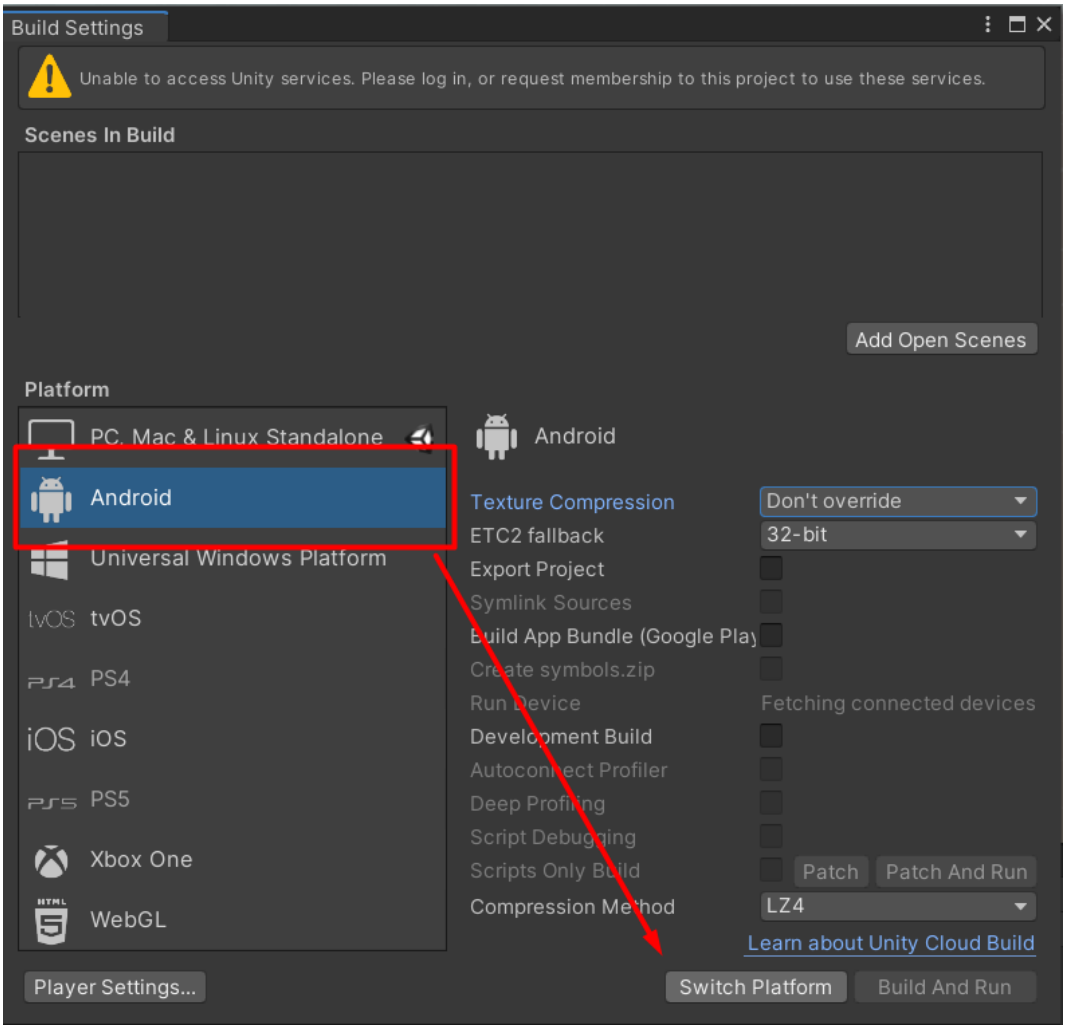
> ! “Follower” is not needed unless you want the calibration steps to follow the direction of gaze.

4. Building the application

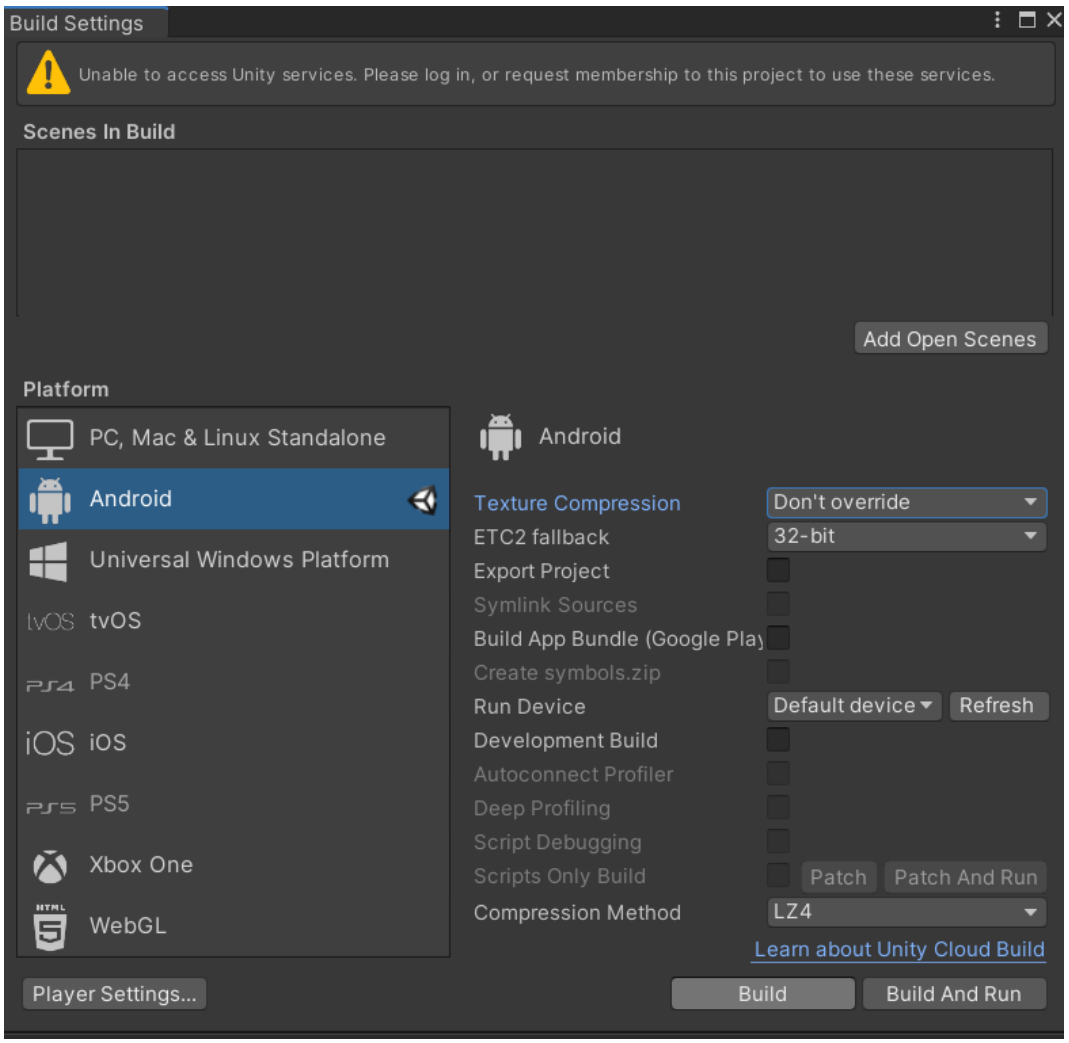
1. To build your project open **Build settings** at File/Build Settings...



2. Switch platform to **Android**



3. After the project is switched to Android, click the **Build** button.



4. After the build is completed, the folder with the assembled apk-file will open. You can install this apk-file on an android device.

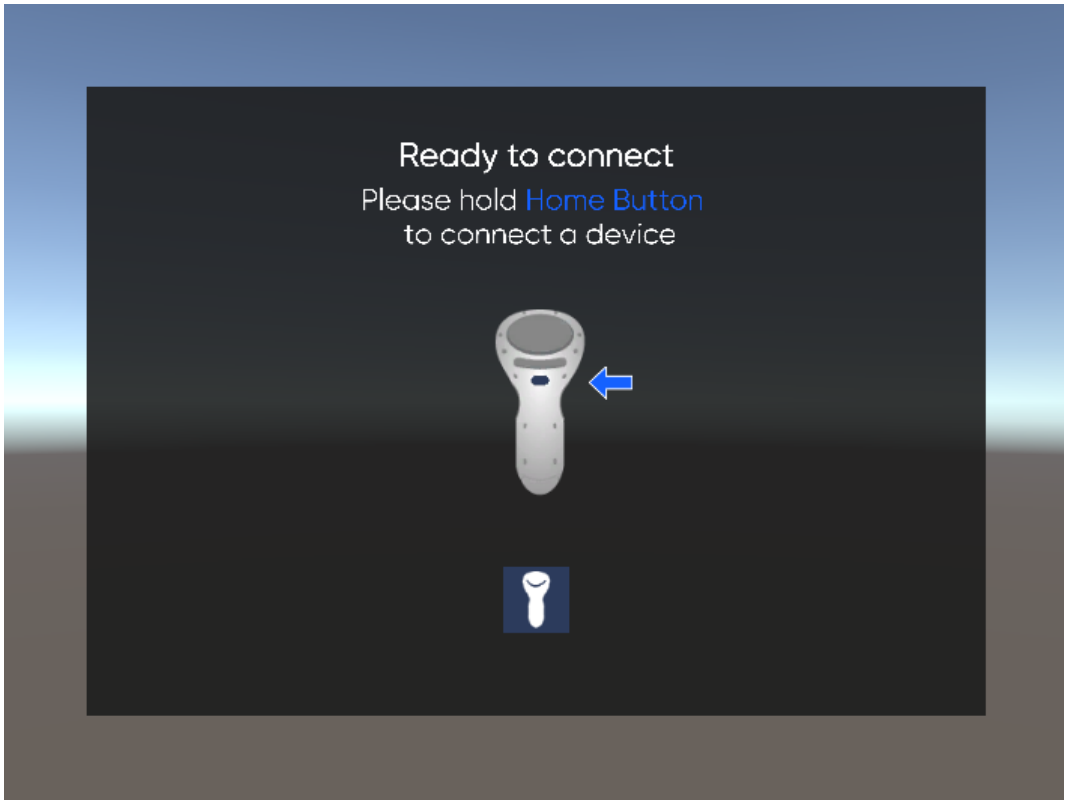
5.Connection and calibration

Connection

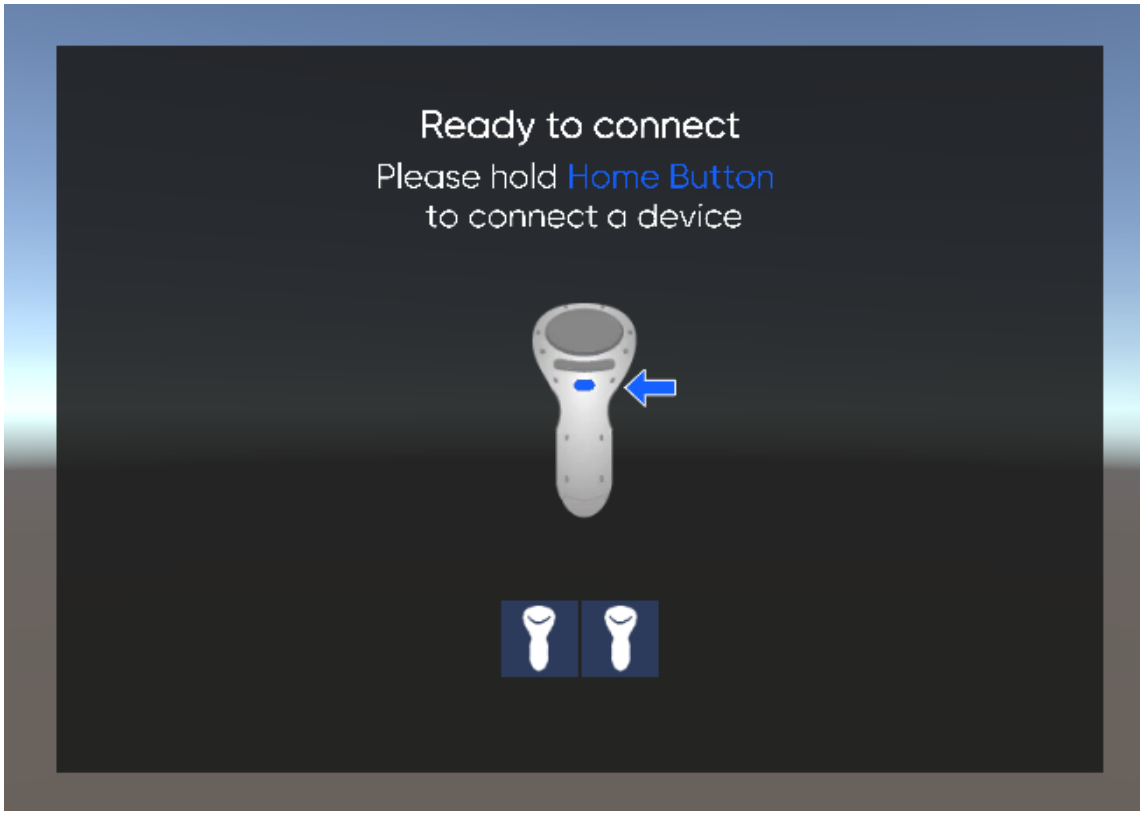
In the SDK there is a process of connection and calibration of FinchShift controllers.

The connection overlay will appear every time you launch the app. Go through the connection process - wait until all devices are automatically connected*.

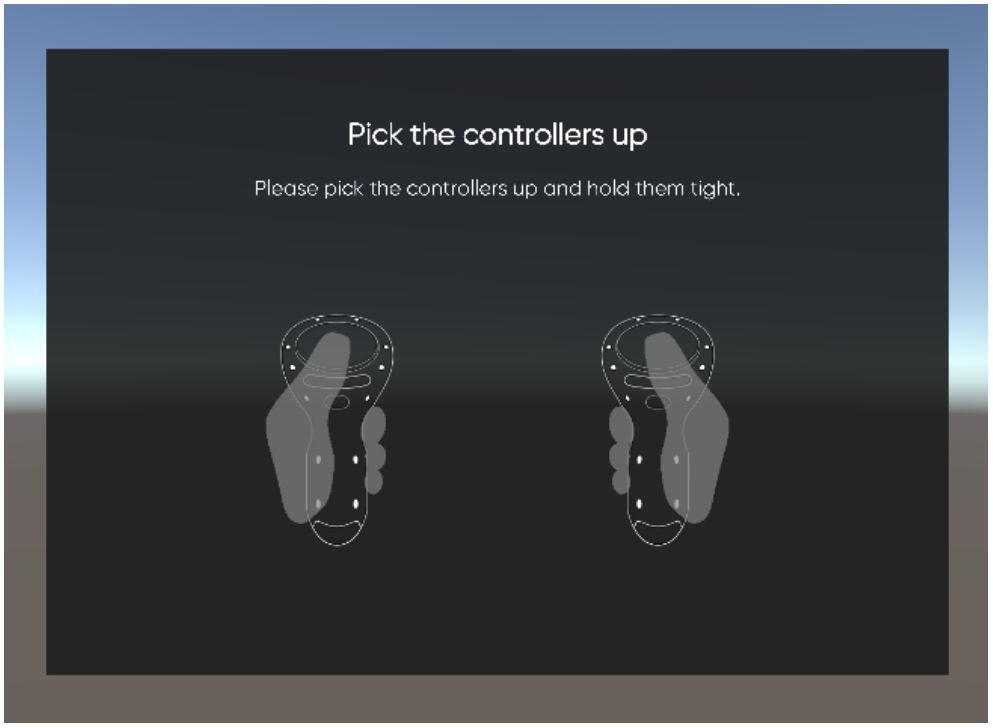
Press and hold the Home Button to connect a device. If you use only one FinchShift controller, you'll see the overlay with one controller on it:



If you use a set of two FinchShift controllers, you'll see the overlay with two controllers on it. Press the Home buttons in turn on each controller one by one until you see the blue indication in each device's interface:



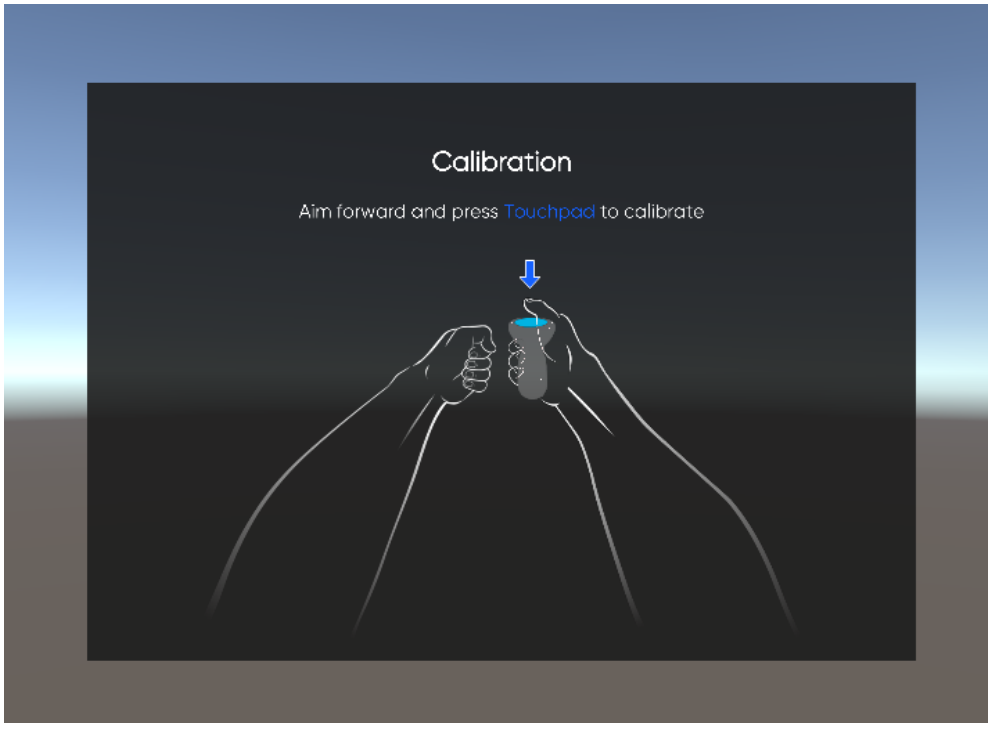
The next step is to bind chirality - each of the controllers must understand whether it is intended for the Right or for the Left hand. Hold the controller as it is described on the overlay:



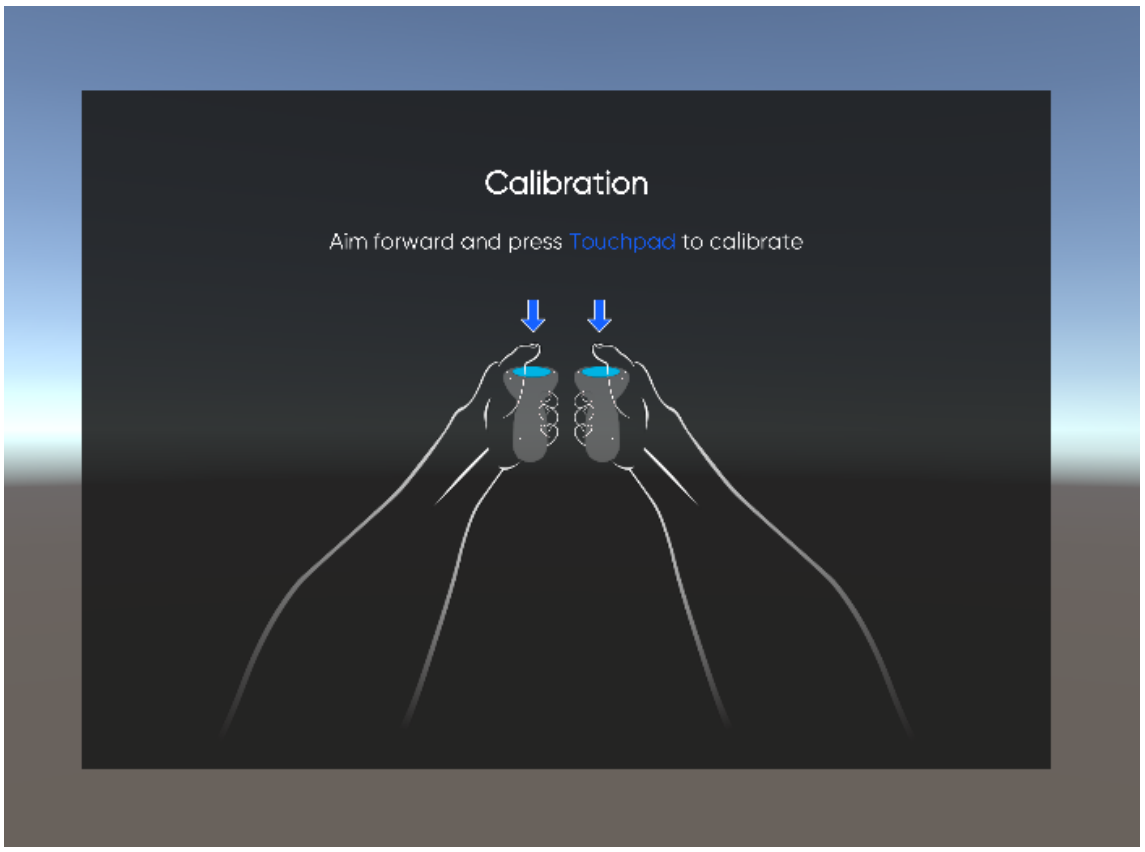
Calibration

After the controllers are connected you will see a Finch calibration overlay. Follow the steps on the overlay.

In the current version of the software package, IMU calibration is used. That means you should straighten your arms in front of you and keep the controller parallel to the ground and press the Touchpad:



When using two FinchShift controllers press the Touchpad in turn on each controller one by one:



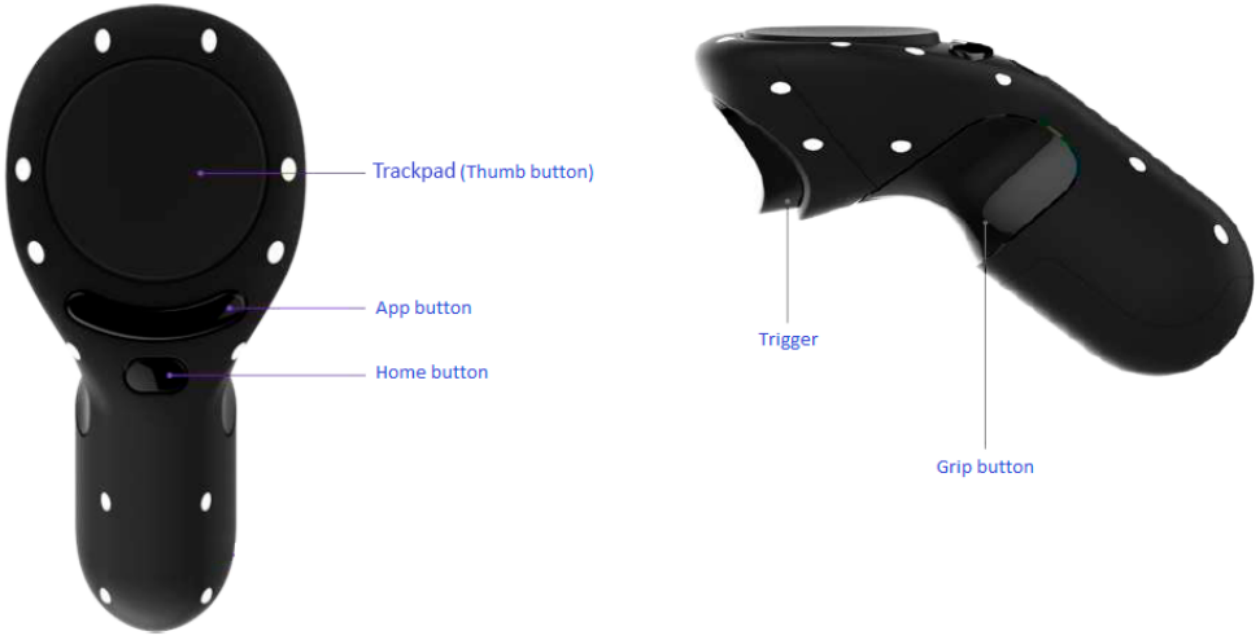
❗ To recalibrate (or in case of disconnection) press and hold the Home button on the controller.

❗ If you are not able to connect controllers - try the following:

- Make sure you have only one set of FinchShift controllers (2 devices) turned on near the headset;
- Make sure the Bluetooth is on;
- Delete all Finch devices and unnecessary devices from the Bluetooth list if there are any;
- Connect controllers manually in the Bluetooth settings then go back to your app and try to connect controllers again.

6. FinchShift buttons mapping

FinchShift v1.0 buttons



7. Known Issues

1. Cardboard orientation problem

> ! Please note that this is the cardboard-mode issue.

Issue: If the phone is turned upside down in cardboard-mode, then the calibration will be incorrect.