

Virtual Reality

We have a number of VR headsets available to students including access to high spec gaming PCs for use with them where necessary.

- Which VR headsets does CCI have?
- Using the VIVE Pro 2 Full Kit
- Connecting Vive Trackers to Unreal Engine

Which VR headsets does CCI have?



- Valve Index VR headset
- Vive Pro Eye Wireless
- Vive Focus 3

Using the VIVE Pro 2 Full Kit



We got the VIVE Pro 2 headset and base stations, controllers (HTC Vive Controllers and VALVE INDEX Controllers), and trackers in the lab.

Setup

For the full official tutorial, please refer to: [VIVE Pro 2 Setup Video](#)

1. Hardware Connections & Power Check

Before powering on your PC: Ensure all devices are powered and connected

- Headset, controllers, Lighthouse base stations, and the Vive link box should all be connected and displaying a solid green light.
- *Link box connections:*
 - **DisplayPort cable** → Graphics card port
 - **USB 3.0 cable** → PC USB port

- **Power adapter** → Mains socket (requires 9V/1.5A or above)
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2. Software Setup

Essential Installations

1. **Steam & SteamVR**

- Download and install the Steam client.
- Search for and install **SteamVR** from your Steam library.

2. **Room Tracking Configuration**

- Open SteamVR > **Room Setup**
 - Base stations should be mounted at a height of at least 2m, positioned diagonally across the play area.
 - *Controller pairing*: Press and hold the system button until the LED flashes blue → complete pairing via the SteamVR interface.
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3. Unreal Engine 5 Integration

Initial Project Setup

1. **Create a New VR Project**

- Template: `Games > Virtual Reality`
- Select `Blueprint` and `Starter Content` (for quick testing)
- **Tip**: Begin with a simple scene (e.g., an empty template) and gradually increase complexity.

2. **Enable Key Plugins**

- Go to `Edit > Plugins` and enable the following:
 - **OpenXR** (recommended for SteamVR compatibility and future-proofing)
 - **OpenXR Hand Tracking**
 - **OpenXR Vive Tracker** (if using external trackers)
 - **SteamVR** (required for the Vive Pro 2)
 - **Oculus VR** (if Oculus headset compatibility is needed)
 - **VR Expansion Plugin** (for advanced interaction features)
- *Restart UE5 to apply changes.*

3. **Optimise Project Settings**

- Open `Edit > Project Settings` and adjust the following:
 - **Rendering**: Enable Forward Rendering and disable Mobile HDR.
 - **XR Settings**: Tick `Start in VR` and enable `Motion Controller Support`.

These settings improve performance and ensure VR input responsiveness.

4. Testing & Troubleshooting

Launching VR Preview

1. Click the dropdown next to the **Play** button (⚙ not the default **Play** mode) and select **VR Preview**.
 2. Put on the headset to test real-time scene rendering.
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☐ Common Issues & Checks

- **Device Not Detected:**
 - Confirm cables are securely connected and devices are powered.
 - Restart SteamVR or the PC if necessary.
- **Tracking Issues:**
 - Ensure base stations are unobstructed and correctly positioned.
 - Check for reflective surfaces or direct sunlight interfering with the sensors.
- **Performance Lag:**
 - Lower rendering resolution or disable unnecessary plugins.
 - Update graphics drivers and Unreal Engine to the latest stable version.

With these steps completed, your HTC Vive Pro 2 should be ready for Unreal Engine 5.2+

Connecting Vive Trackers to Unreal Engine

For the full official tutorial, please refer to:

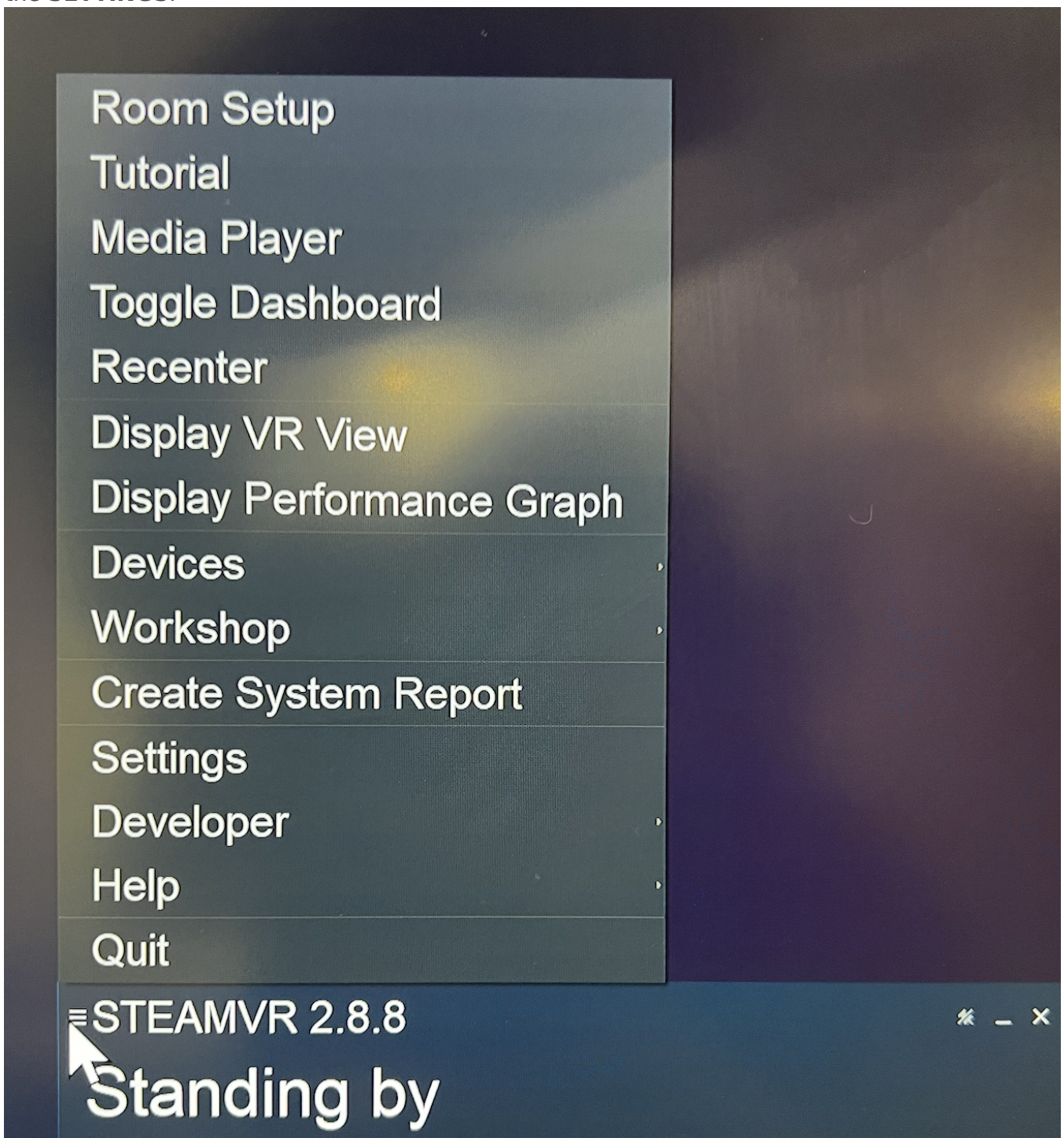
- [Pairing Vive Trackers \(3.0\)](#)
- [Fixing Live Link XR in Unreal Engine 5.2 and 5.3](#)

1. Get Your Trackers Ready

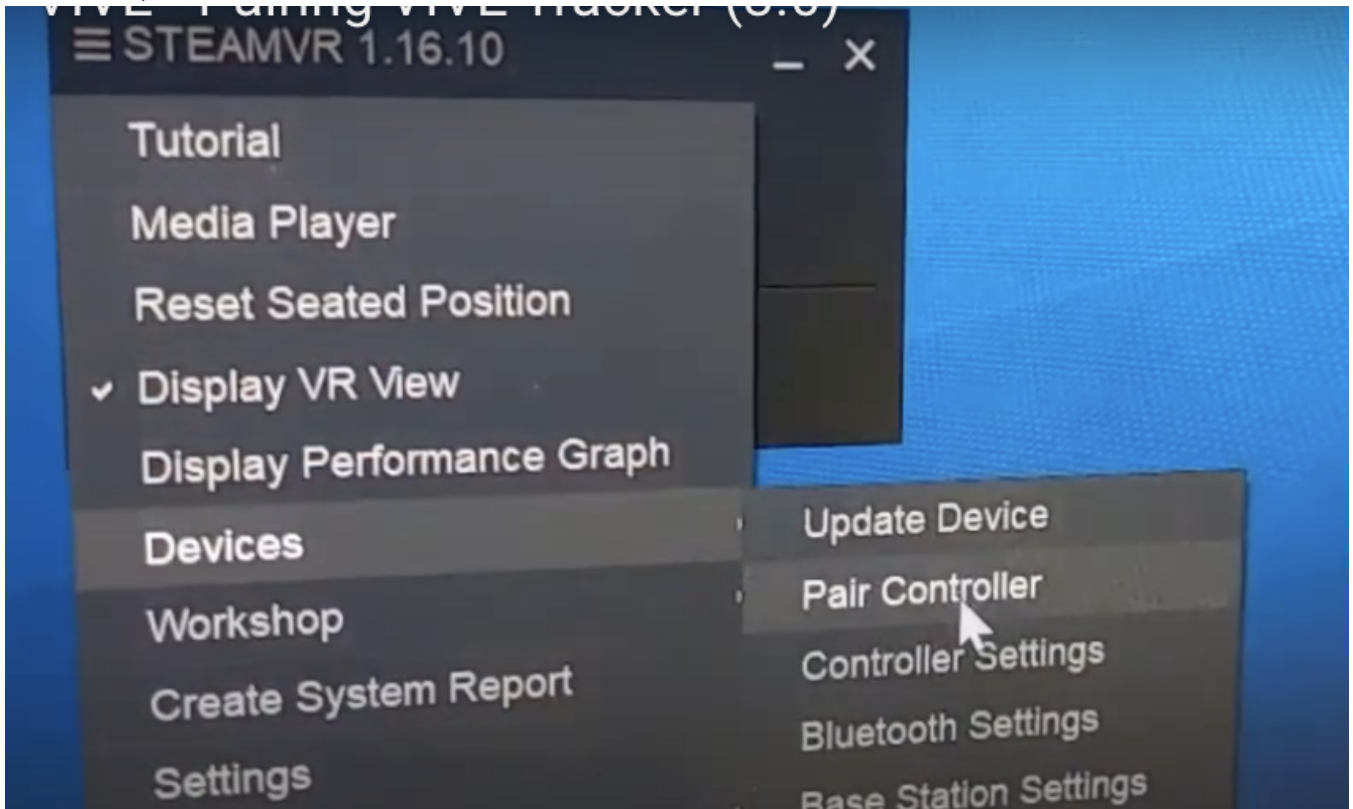
First things first—make sure each Vive Tracker is turned on and paired through SteamVR.

SteamVR Settings > Devices > Pair Controllers > I want to pair a different type of controller.. > HTC Vive Tracker. You'll know it's good to go when the LED light is solid green.

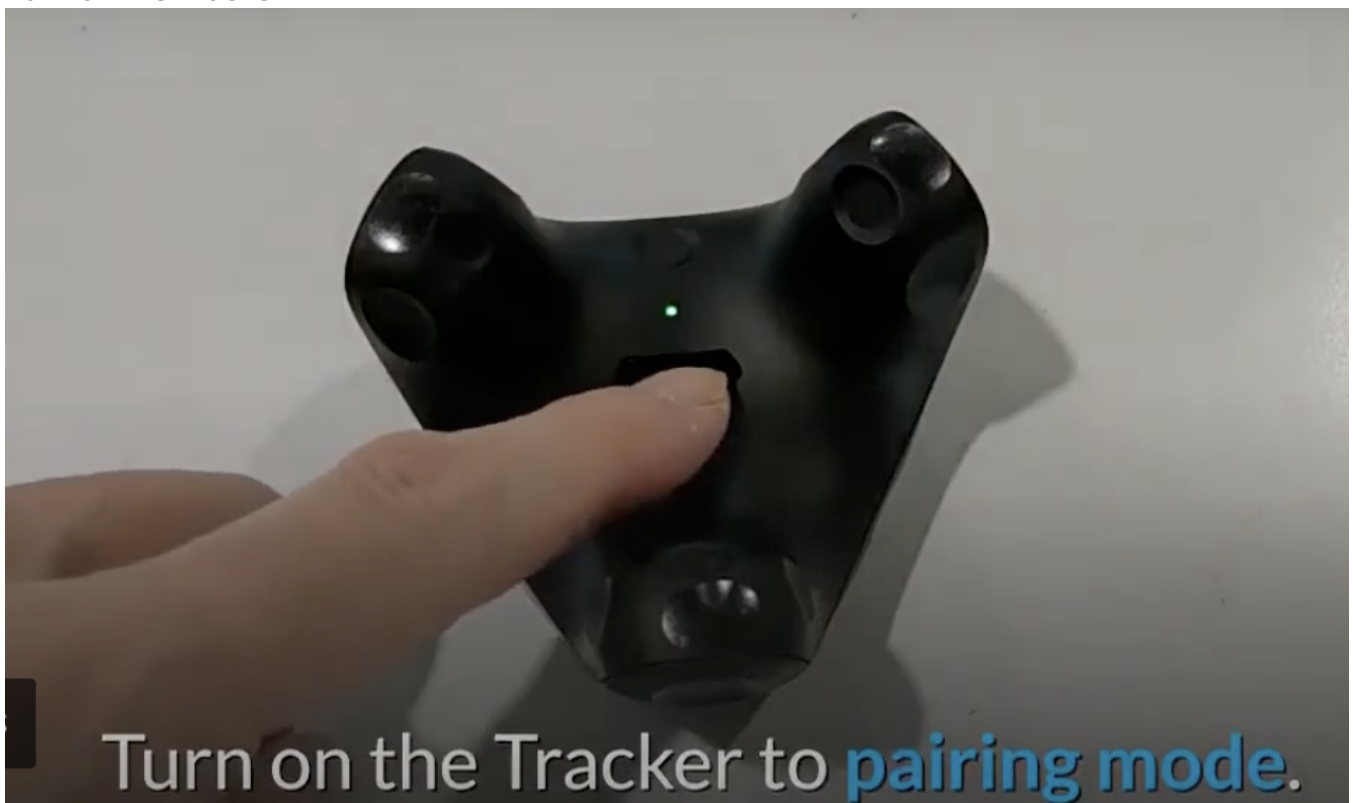
- Click the 3 little lines on the top left of the SteamVR desktop dashboard window to open the **SETTINGS**.



- Then go to Devices, chose pair your contrllers, click on I want to pair a different type of controller, then select HTC Vive Tracker.



- Turn on the Tracker.



Turn on the Tracker to **pairing mode**.

2. Set Up the Plugin

- Double-check that SteamVR is running.
- Open Unreal Engine and go to **Edit > Plugins**.

- Find and enable **OpenXR Vive Tracker**.
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3. Assign Tracker Roles

After pairing your trackers you will need to **assign them to the correct body part** in SteamVR's Manage Trackers section, Left foot, Right Foot, ect. Its best to do them one at a time and label the tracker in some way so you know which body part is paired with that tacker.

Now let's tell SteamVR which tracker does what:

- **SteamVR Settings > Controllers > Manage Trackers**
 - Assign the roles like this:
 - **Waist** → waist
 - **Left Foot** → left_foot
 - **Right Foot** → right_foot
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4. Integrate with Unreal Engine

- Open your project's blueprint.
 - Locate the **Motion Controller** component.
 - Add a **Live Link** component to stream tracker data.
 - Make sure the **Role** matches the SteamVR assignments.
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5. Find and Link the Prawn Asset

- Connect the prawn's motion controllers to the corresponding trackers. You could check here for more details [Fixing Live Link XR in Unreal Engine 5.2 and 5.3](#)
 - Open the **Content Browser**.
 - Search for **prawn**, and follow the tutorial video.
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6. Test and Calibrate

- Run your project in **VR Preview**.
- Do some basic movements to check if everything tracks correctly.