STANFORDXR

VR Workshop

What's different about VR Development?

Two main things:

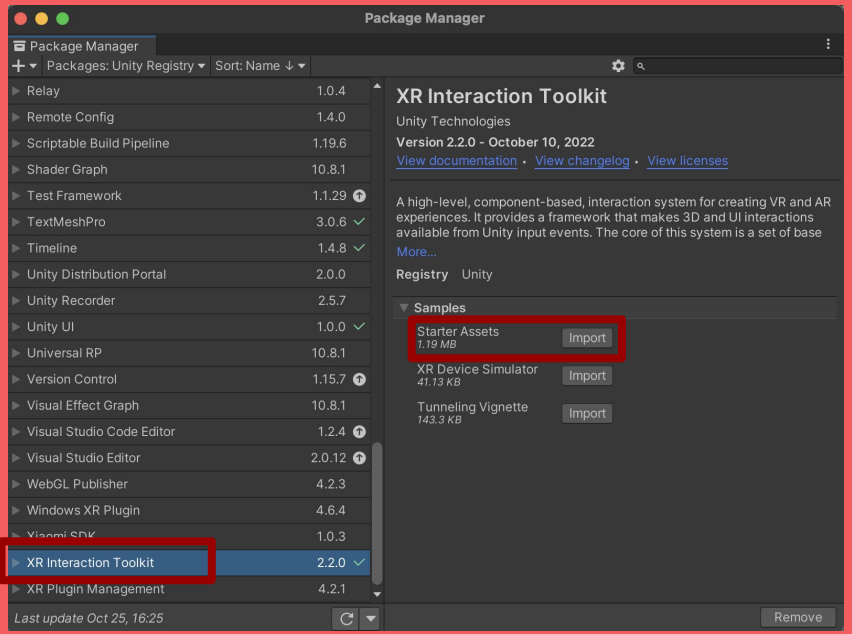
- Player view
- Controller Interaction

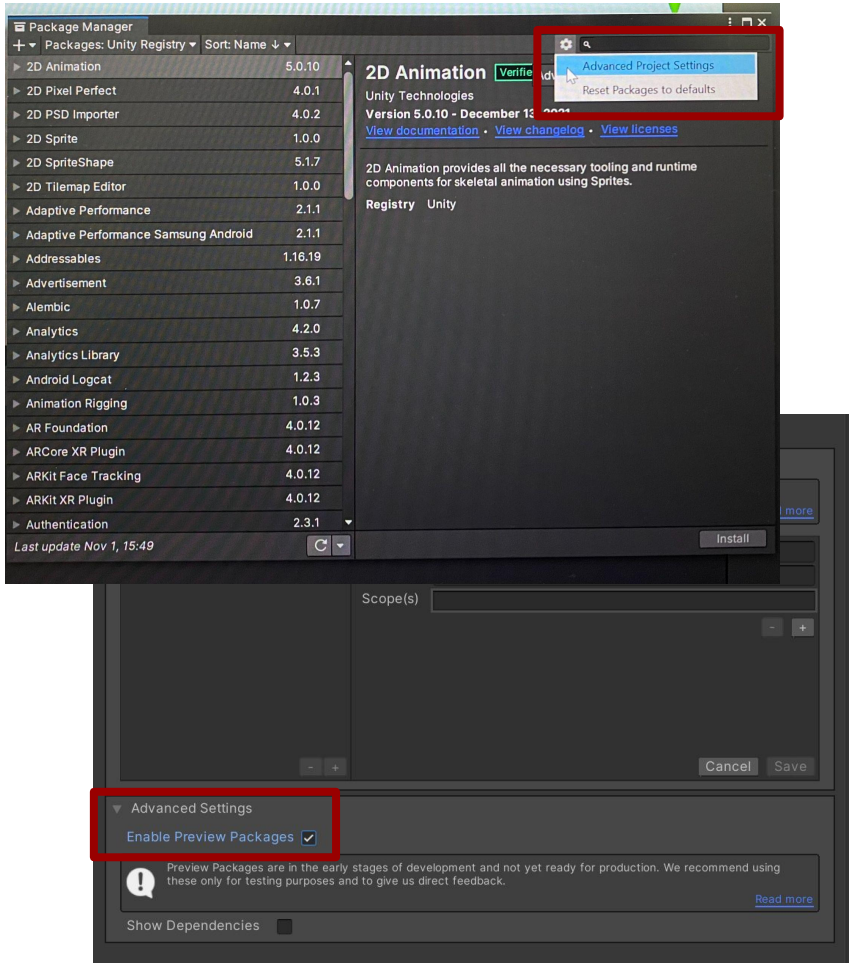
Other than that, we use almost the same Unity Development techniques as in normal 3D games/experiences

XR Interaction Toolkit

Window > Package Manager > In Unity Registry > XR Interaction Toolkit

Install **Starter Assets**



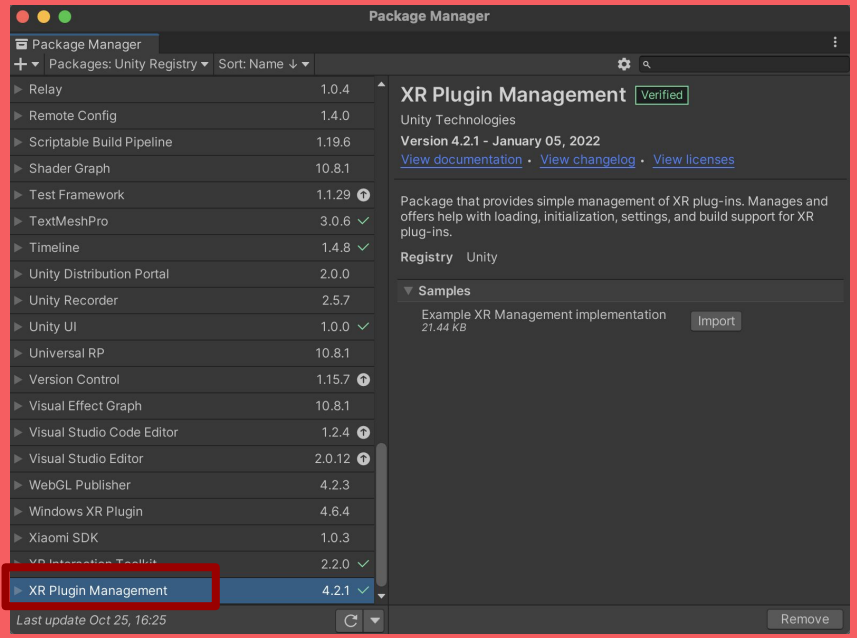


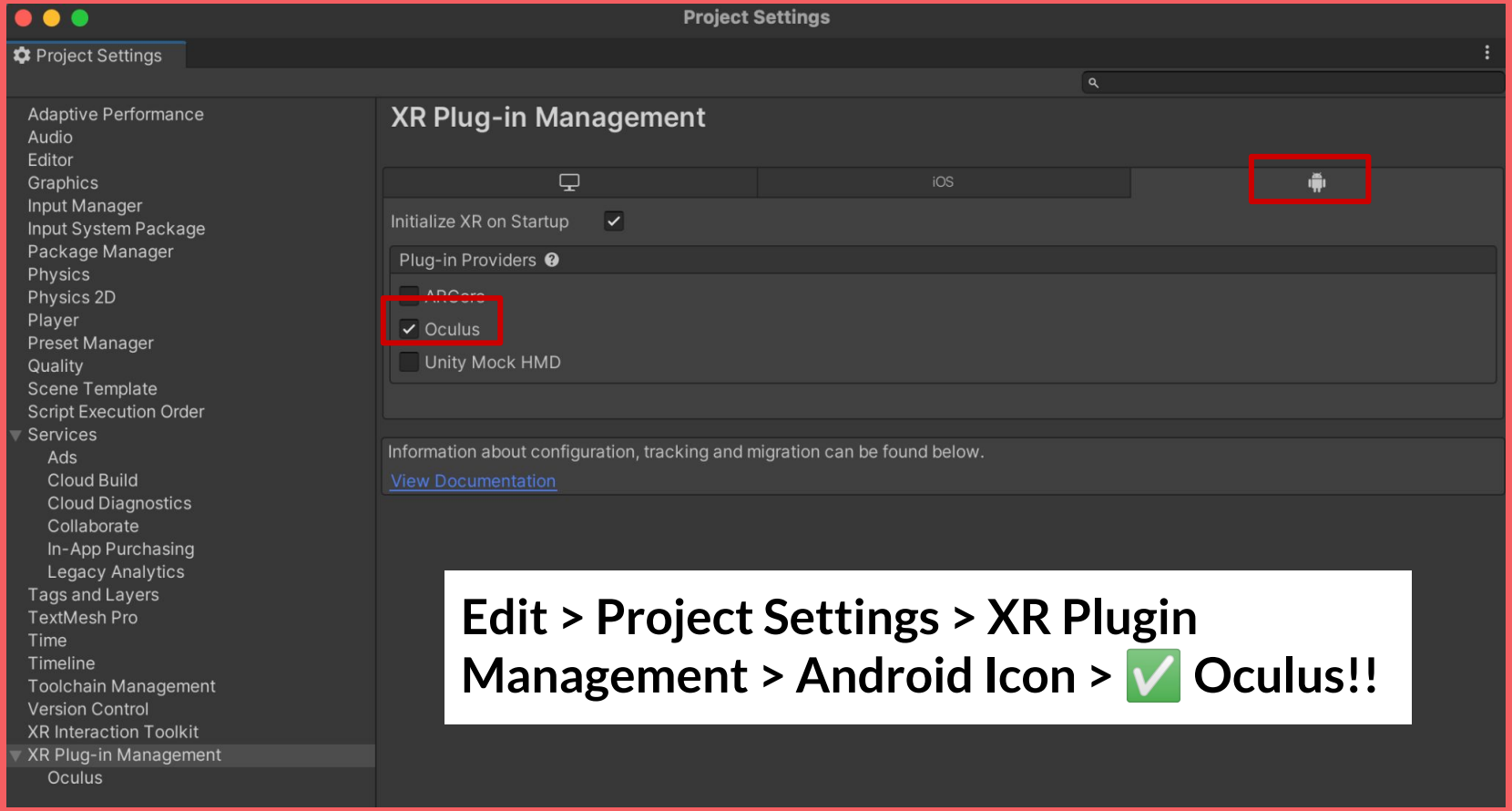
If you can't see XRIT...

XR Plugin Management

Window > Package Manager > In Unity Registry > XR Plugin Management

Install!



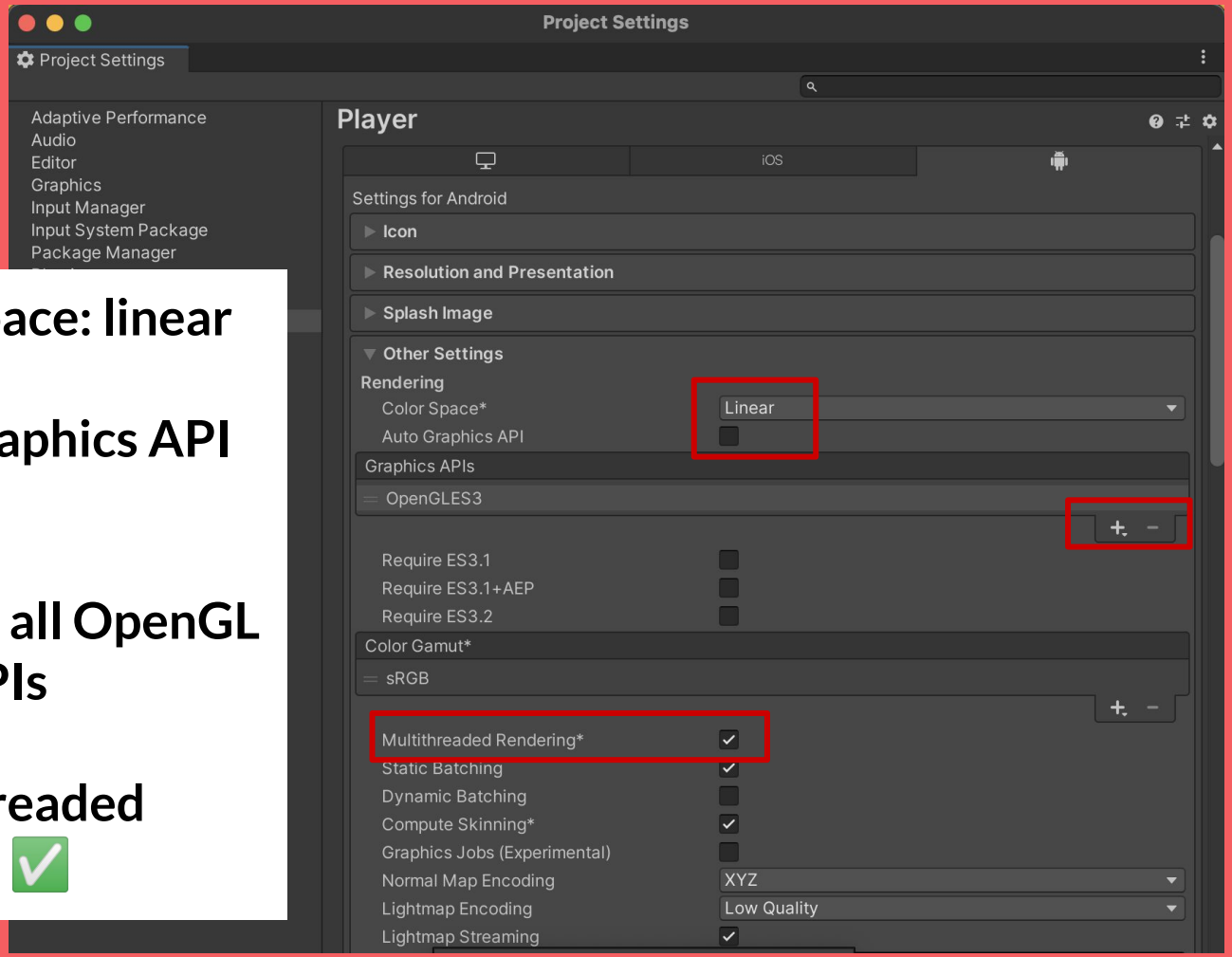

Project Settings
Project Settings
Adaptive Performance
Audio
Editor
Graphics
Input Manager
Input System Package
Package Manager
Physics
Physics 2D
Player
Preset Manager
Quality
Scene Template
Script Execution Order
Services
Ads
Cloud Build
Cloud Diagnostics
Collaborate
In-App Purchasing
Legacy Analytics
Tags and Layers
TextMesh Pro
Time
Timeline
Toolchain Management
Version Control
XR Interaction Toolkit
XR Plug-in Management
Oculus
XR Plug-in Management
iOS
Initialize XR on Startup
Plug-in Providers
Oculus
Unity Mock HMD
Information about configuration, tracking and migration can be found below.
View Documentation
Edit > Project Settings > XR Plugin Management > Android Icon > ✅ Oculus!!

1. Color space: linear

2. Auto Graphics API false

3. Remove all OpenGL graphic APIs

4. Multithreaded Rendering ✅

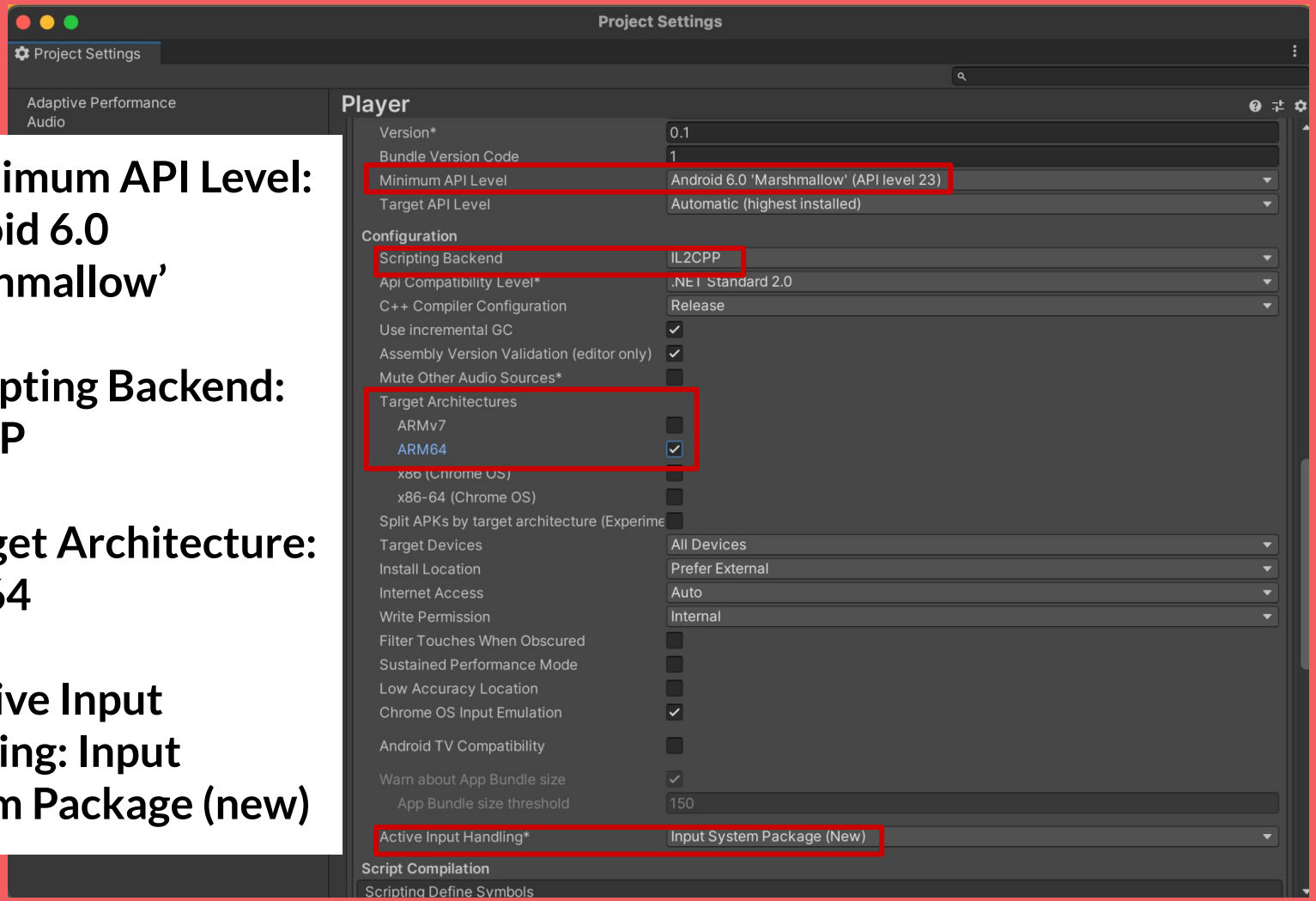


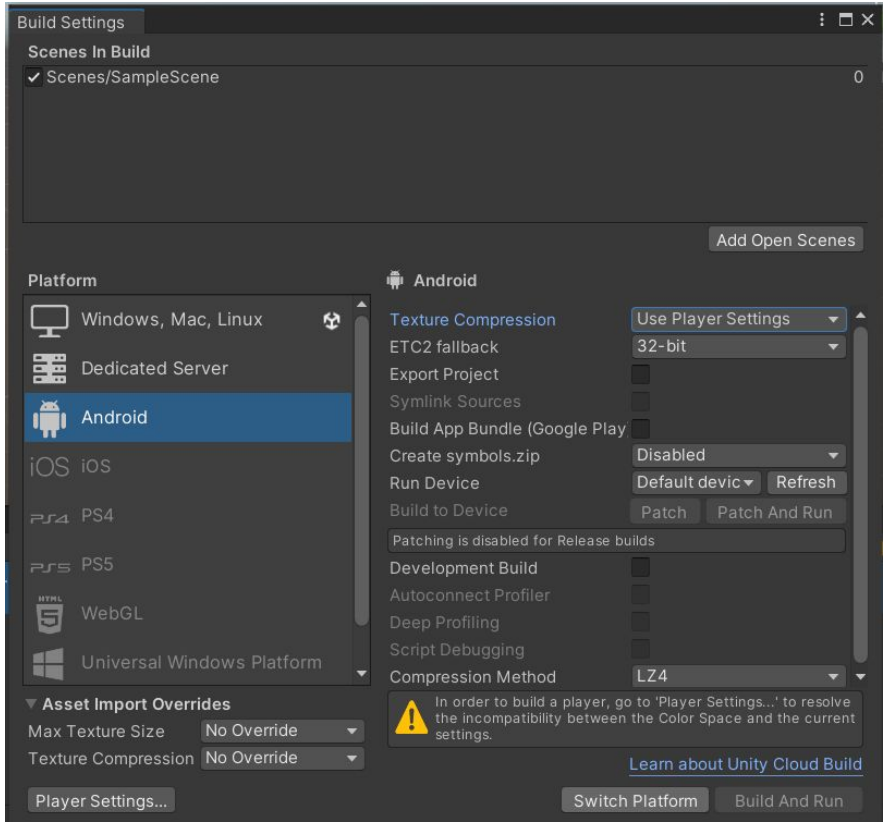
5. Minimum API Level: Android 6.0 ‘Marshmallow’

6. Scripting Backend: IL2CPP

7. Target Architecture: ARM64

8. Active Input Handling: Input System Package (new)





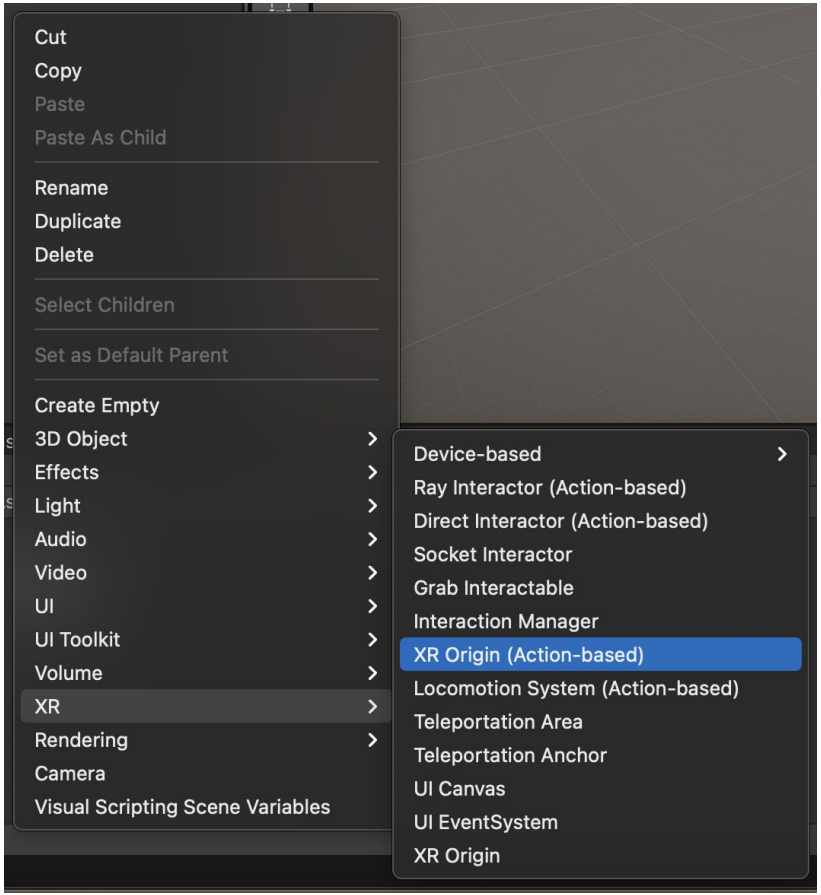
Build Setup

File > **Build Settings**

select **Android** under **Platform**

click **Switch Platform**

Player Navigation

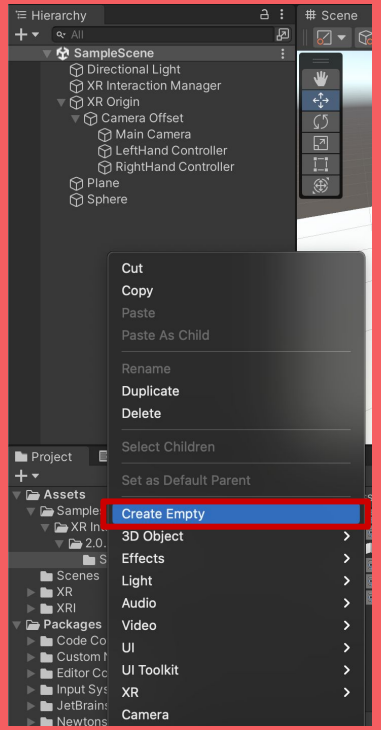


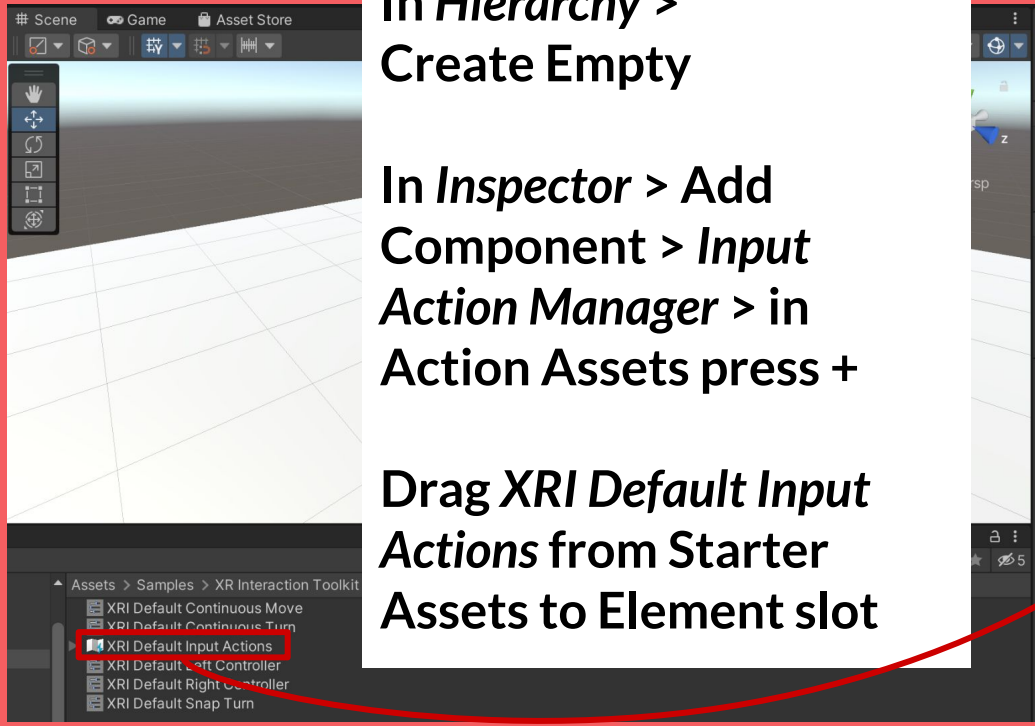
XR Origin Setup

Delete **Main Camera**

Add XR > **XR Origin (Action-based)**

Input Action Manager

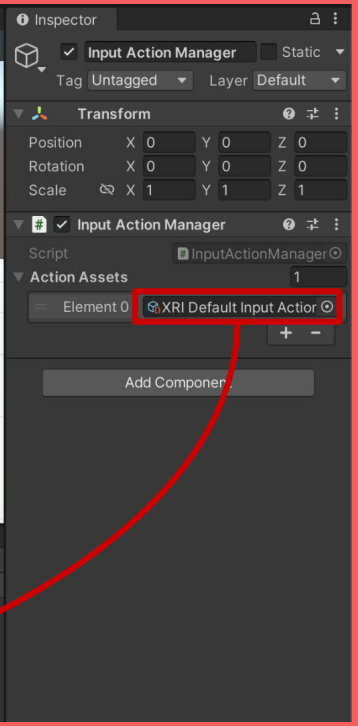




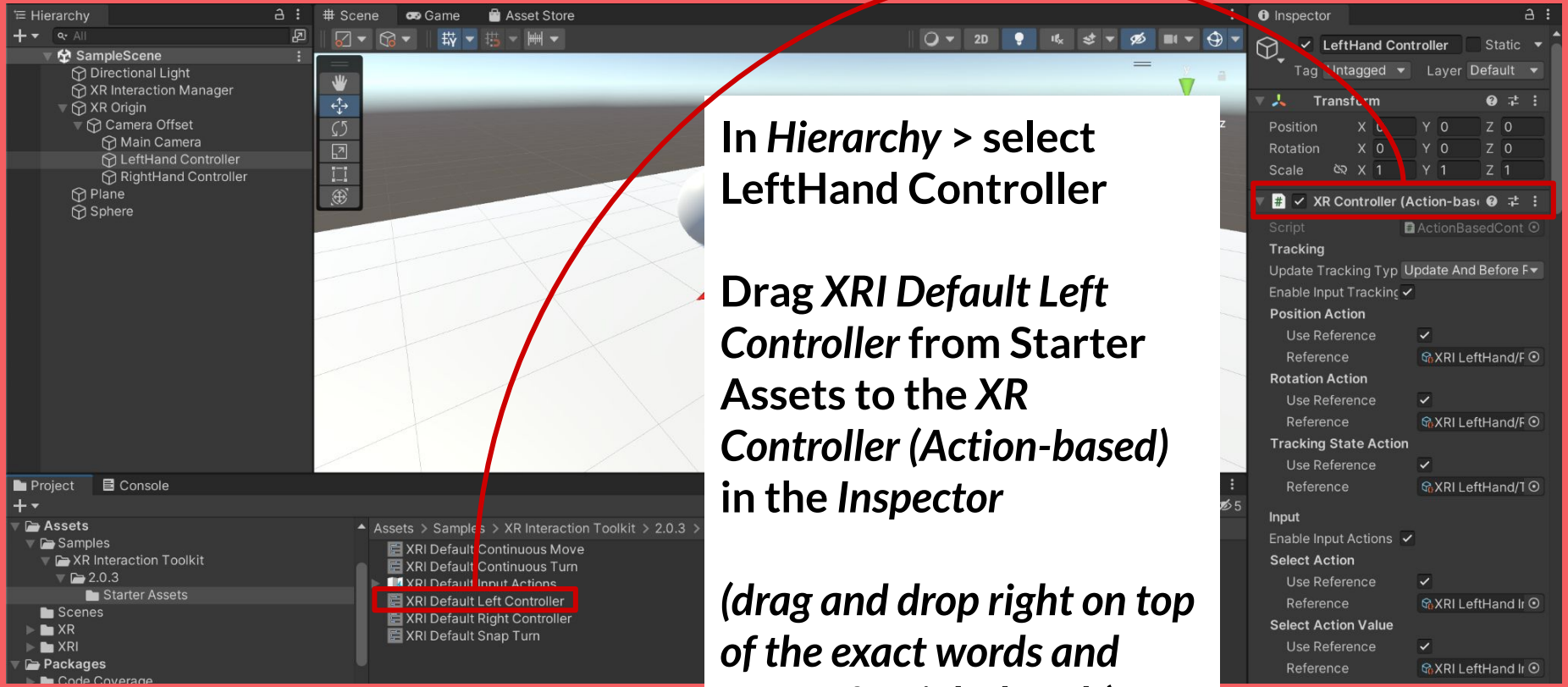
In *Hierarchy* > Create Empty

In *Inspector* > Add Component > *Input Action Manager* > in Action Assets press +

Drag *XRI Default Input Actions* from Starter Assets to Element slot



Controller Setup

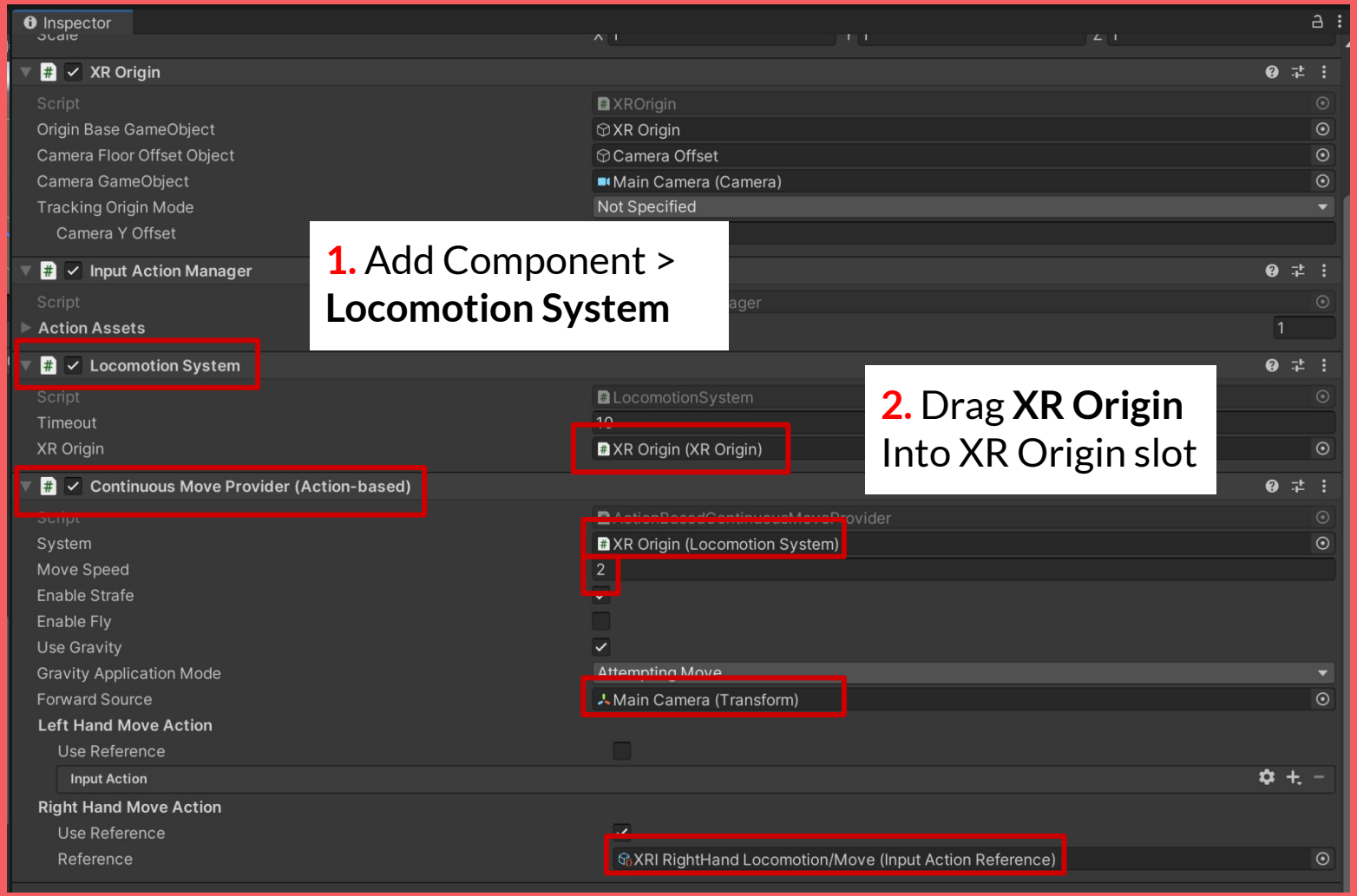


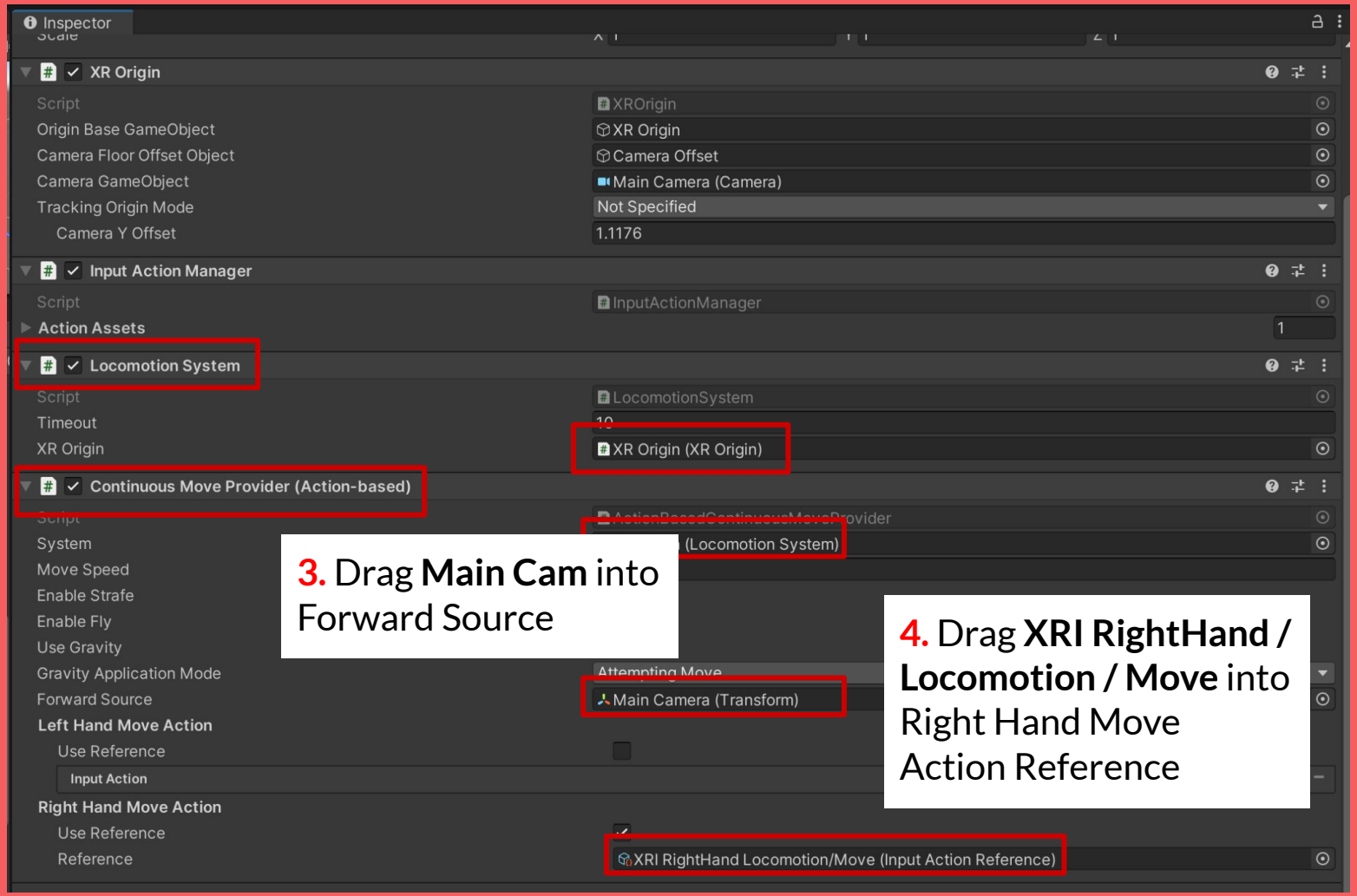
In *Hierarchy* > select LeftHand Controller

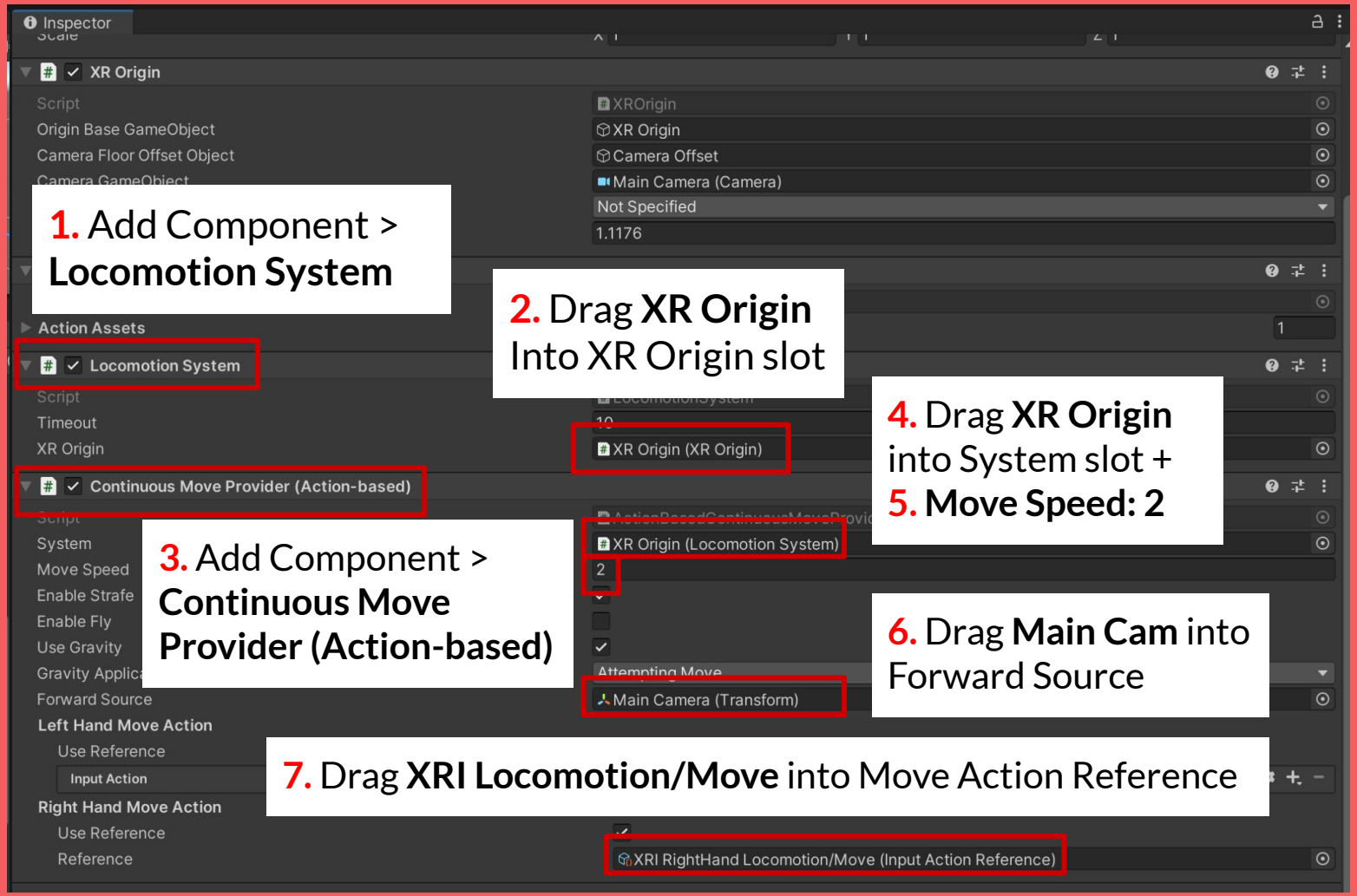
Drag *XRI Default Left Controller* from Starter Assets to the *XR Controller (Action-based)* in the *Inspector*

(drag and drop right on top of the exact words and repeat for right hand!)

Locomotion Setup


Inspector
XR Origin
Script
XROrigin
Origin Base GameObject
XR Origin
Camera Floor Offset Object
Camera Offset
Camera GameObject
Main Camera (Camera)
Tracking Origin Mode
Not Specified
Camera Y Offset
1. Add Component > Locomotion System
Input Action Manager
Action Assets
Locomotion System
Script
LocomotionSystem
Timeout
XR Origin
XR Origin (XR Origin)
2. Drag XR Origin Into XR Origin slot
Continuous Move Provider (Action-based)
System
XR Origin (Locomotion System)
Move Speed
2
Enable Strafe
Enable Fly
Use Gravity
Gravity Application Mode
Forward Source
Main Camera (Transform)
Left Hand Move Action
Use Reference
Input Action
Right Hand Move Action
Use Reference
Reference
XRI RightHand Locomotion/Move (Input Action Reference)

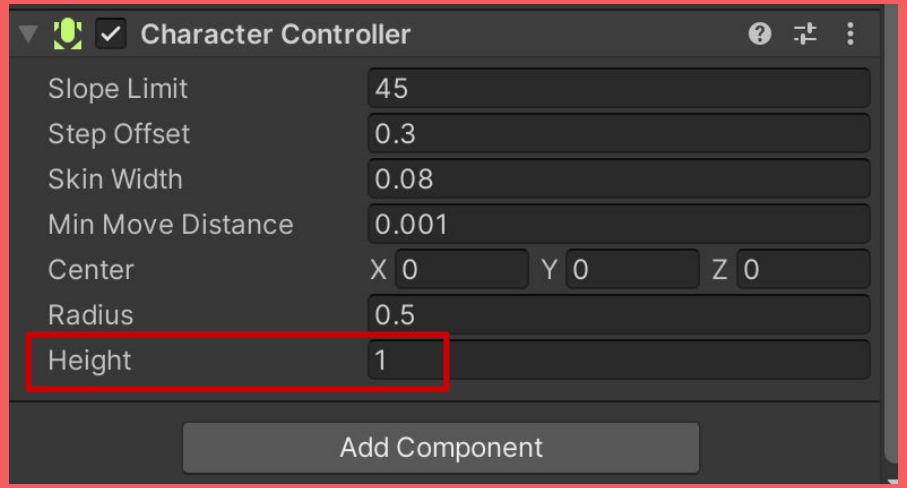

Inspector
XR Origin
Script
XROrigin
Origin Base GameObject
XR Origin
Camera Floor Offset Object
Camera Offset
Camera GameObject
Main Camera (Camera)
Tracking Origin Mode
Not Specified
Camera Y Offset
1.1176
Input Action Manager
Script
InputActionManager
Action Assets
1
Locomotion System
Script
LocomotionSystem
Timeout
XR Origin
XR Origin (XR Origin)
Continuous Move Provider (Action-based)
System
(Locomotion System)
Move Speed
Enable Strafe
Enable Fly
Use Gravity
Gravity Application Mode
Forward Source
Main Camera (Transform)
Left Hand Move Action
Use Reference
Input Action
Right Hand Move Action
Use Reference
Reference
XRI RightHand Locomotion/Move (Input Action Reference)
3. Drag Main Cam into Forward Source
4. Drag XRI RightHand / Locomotion / Move into Right Hand Move Action Reference

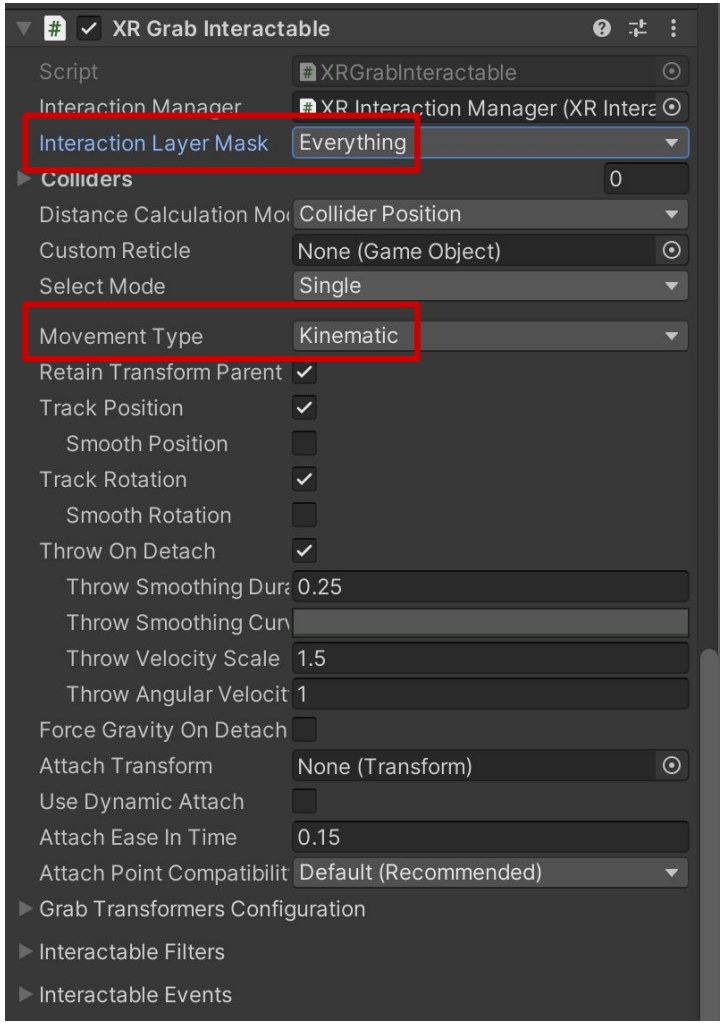

Inspector
XR Origin
Script
XROrigin
Origin Base GameObject
XR Origin
Camera Floor Offset Object
Camera Offset
Main Camera (Camera)
Not Specified
1.1176
1. Add Component > Locomotion System
2. Drag XR Origin Into XR Origin slot
Action Assets
1
Locomotion System
Script
Timeout
XR Origin
XR Origin (XR Origin)
4. Drag XR Origin into System slot +
5. Move Speed: 2
Continuous Move Provider (Action-based)
System
XR Origin (Locomotion System)
Move Speed
2
Enable Strafe
Enable Fly
Use Gravity
Gravity Applica
Attempting Move
Forward Source
Main Camera (Transform)
3. Add Component > Continuous Move Provider (Action-based)
6. Drag Main Cam into Forward Source
Left Hand Move Action
Use Reference
Input Action
7. Drag XRI Locomotion/Move into Move Action Reference
Right Hand Move Action
Use Reference
Reference
XRI RightHand Locomotion/Move (Input Action Reference)

Character Controller

Add Component > **Character Controller**

Set Height to 1





Object Grabbing

Add > 3D Object > Spheres

Select the sphere > **add component** > **XR Grab Interactable**

Set **Interaction Layer Mask** to **Everything**

Set **Movement Type** to **Kinematic**