

Advanced VR – Oculus

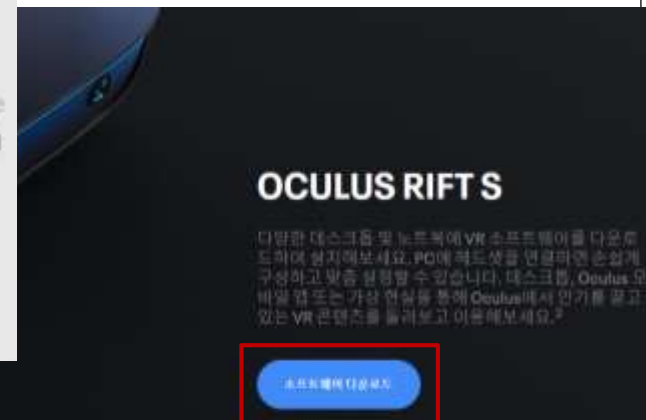
(Chapter 7)

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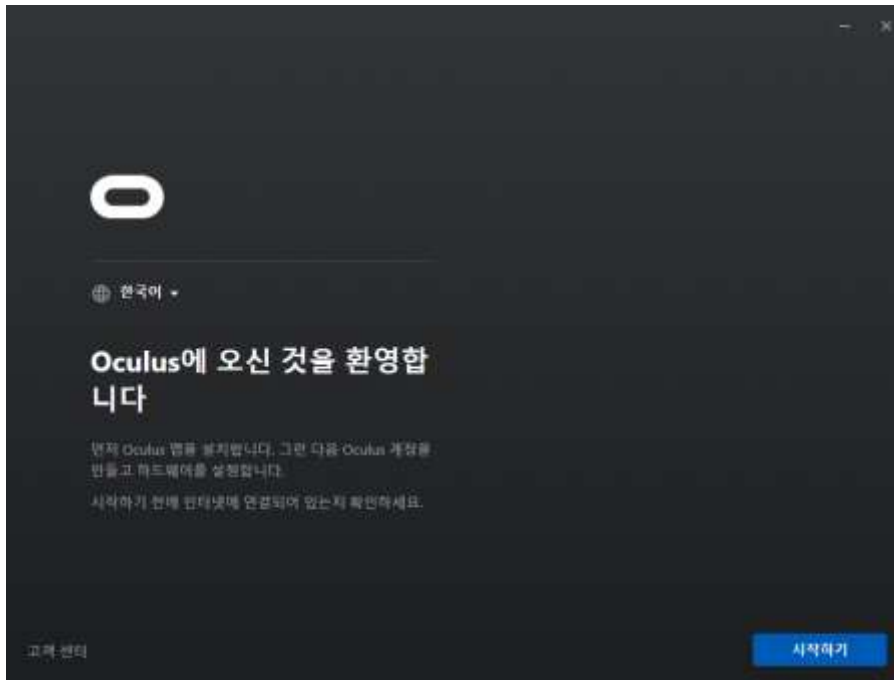
Oculus Setup

- 오쿨러스 개발자 사이트
 - https://www.oculus.com/setup/?locale=ko_KR
 - OculusSetup.exe 다운로드 후 설치



Oculus Setup

- Oculus Setup



Oculus Setup – Oculus Quest

- Oculus Setup
 - 스마트폰 → Oculus 앱 설치 후 페어링
 - 페어링이 안될 경우, 오쿨러스 퀘스트 초기화 후 새롭게 설정
 - 화면에서 안내하는 내용대로 실행



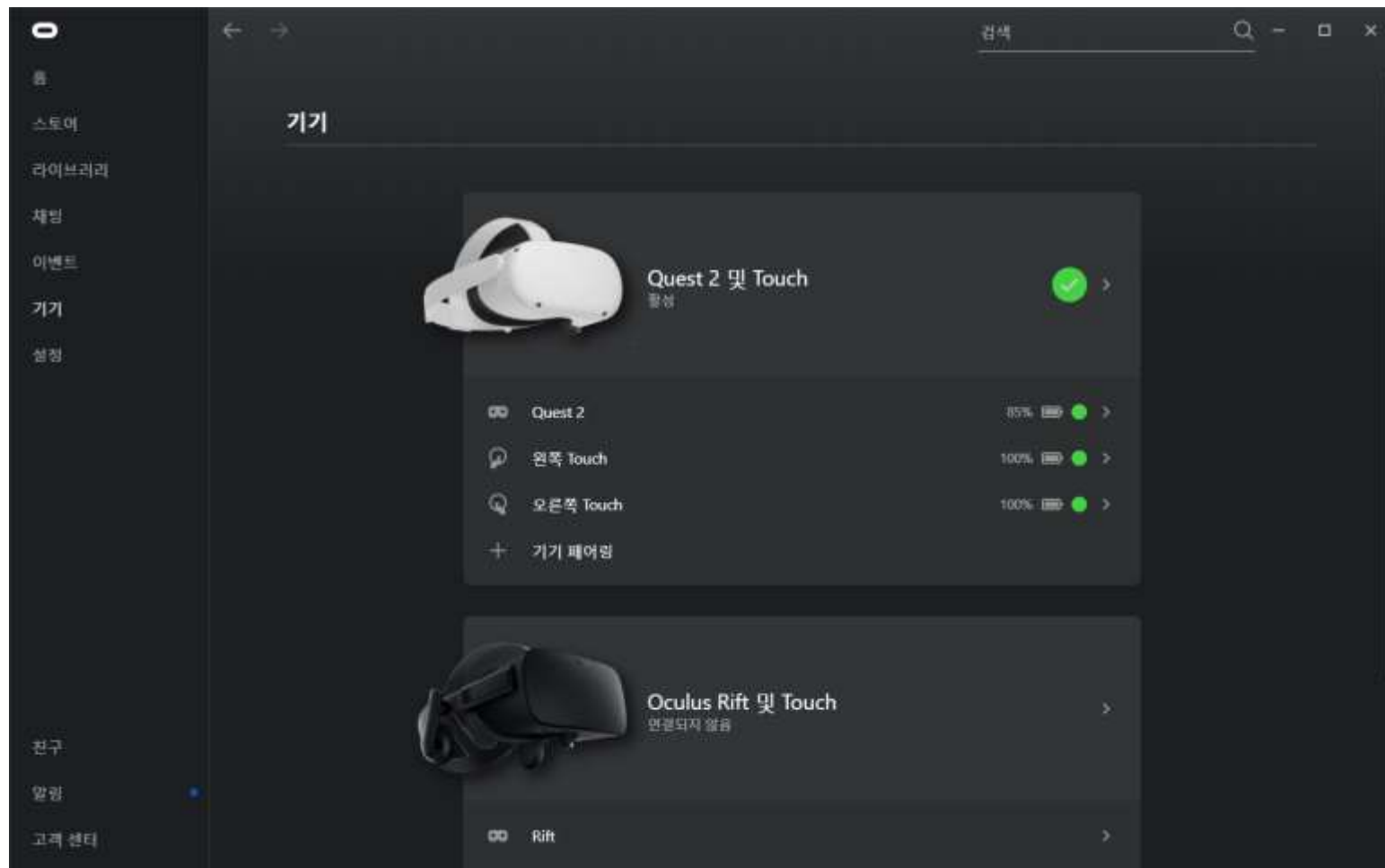
Oculus Setup – Oculus Quest

- PC와의 연결
 - 링크 케이블
 - 오쿨러스 퀘스트는 독립형 플랫폼으로 PC와 연결하여 개발 및 실행하기 위해서는 링크 케이블이 필요



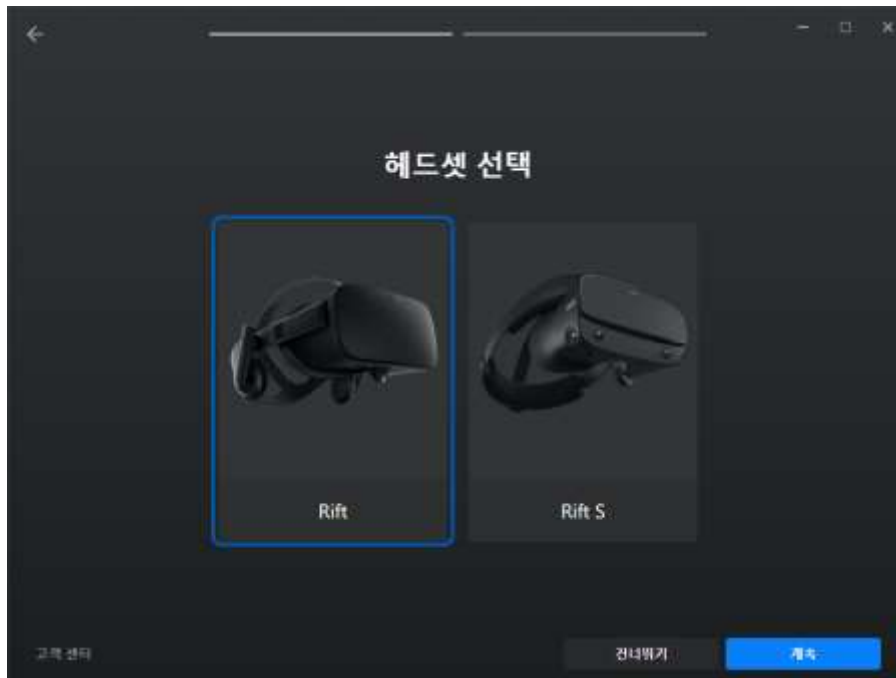
Oculus Setup

- Oculus Setup
 - PC와 기기 연결 확인



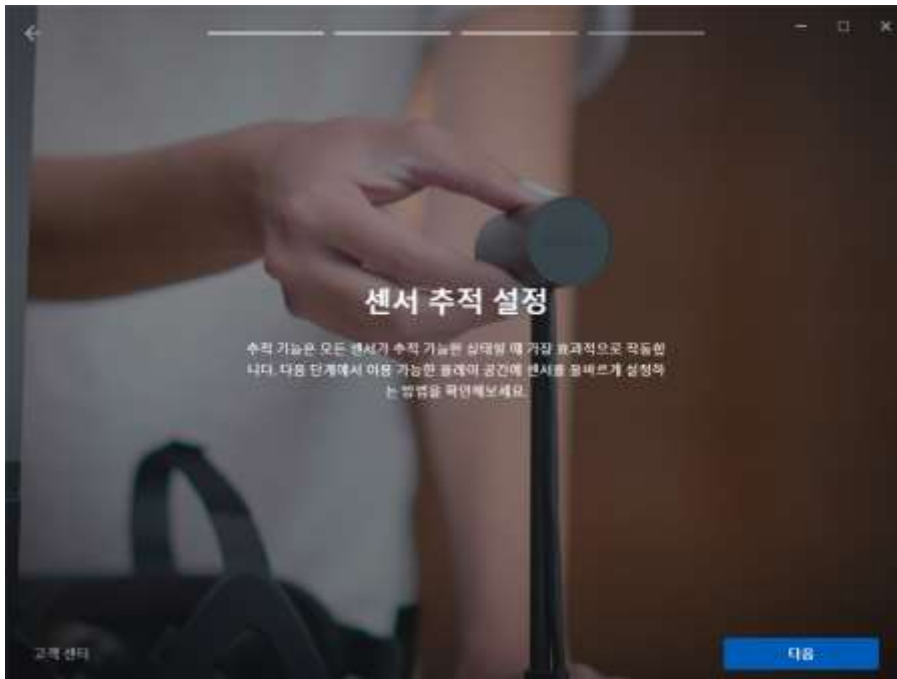
Oculus Setup – Oculus Rift/Rift S

- Oculus Setup



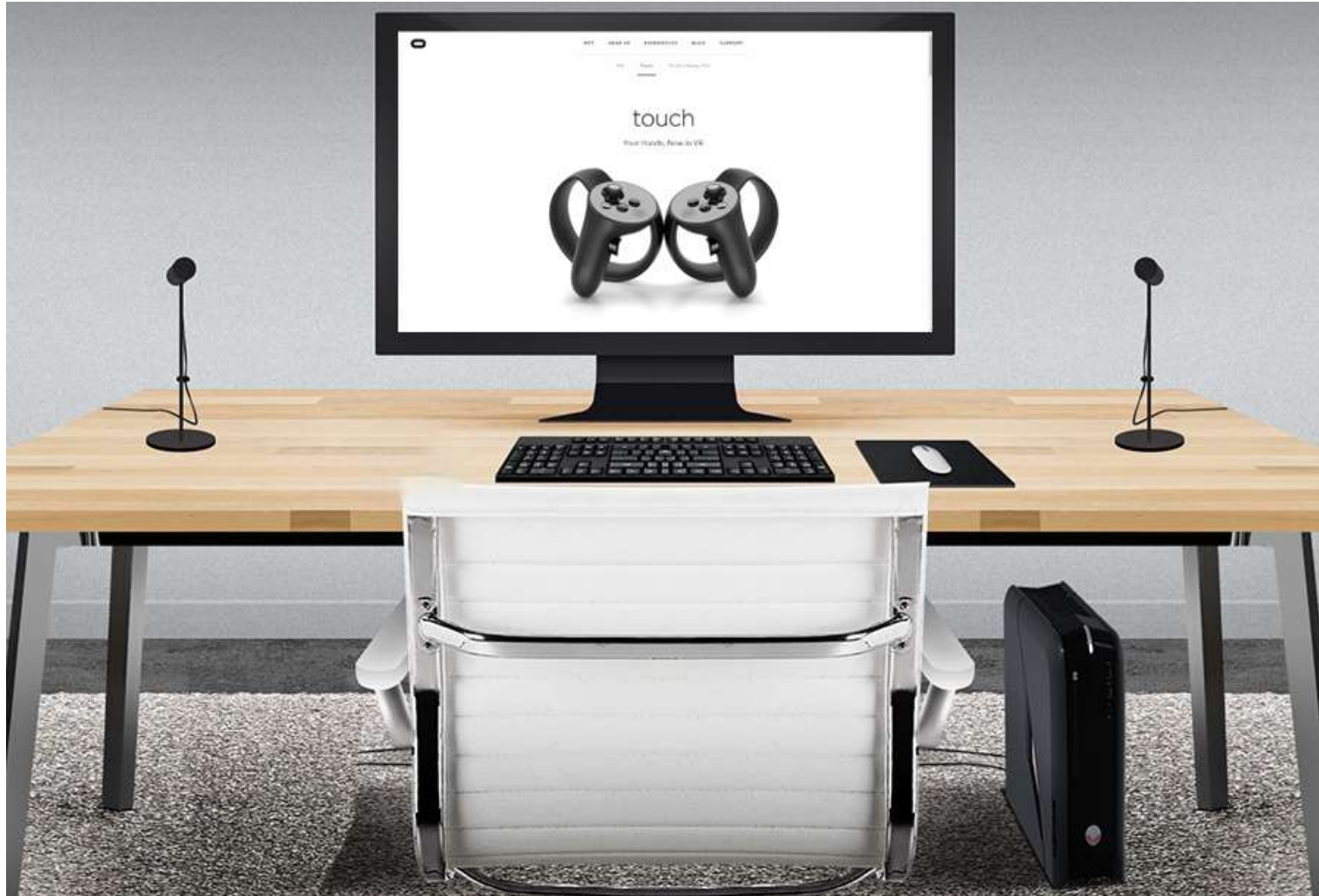
Oculus Setup – Oculus Rift/Rift S

- Oculus Setup



Oculus Setup – Oculus Rift/Rift S

- Oculus Setup

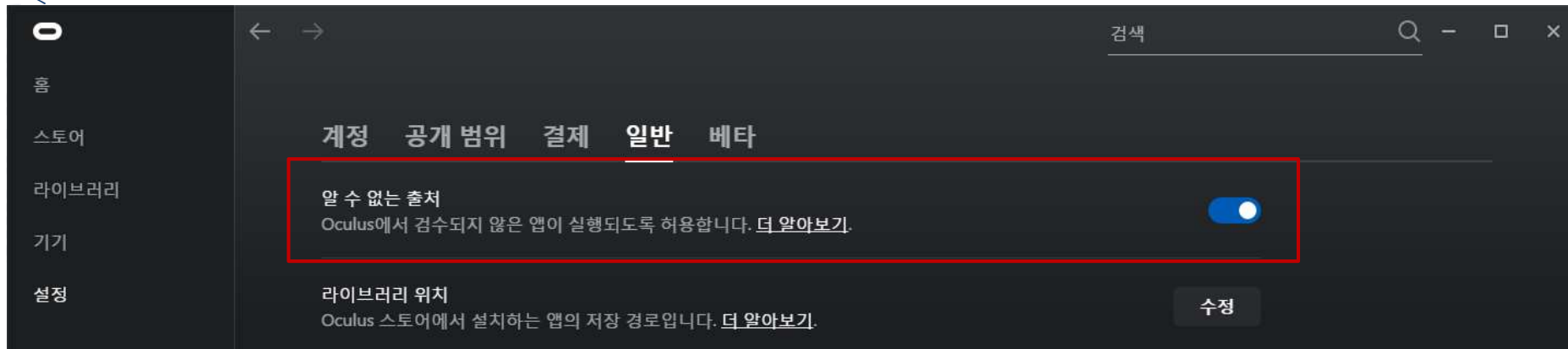


Unity Project Oculus Setup - 2019

- Oculus Integration for Unity
 - Player Settings – Version 2019

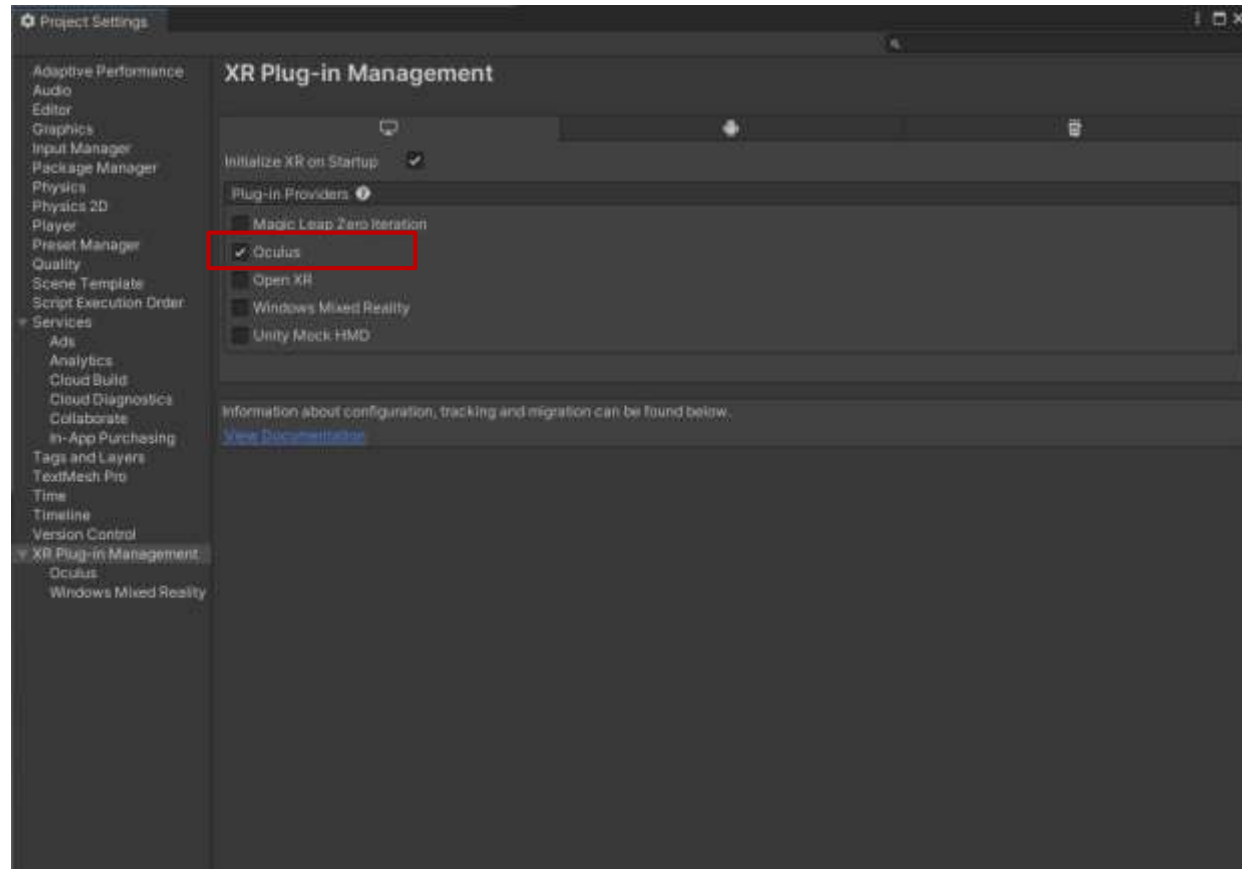
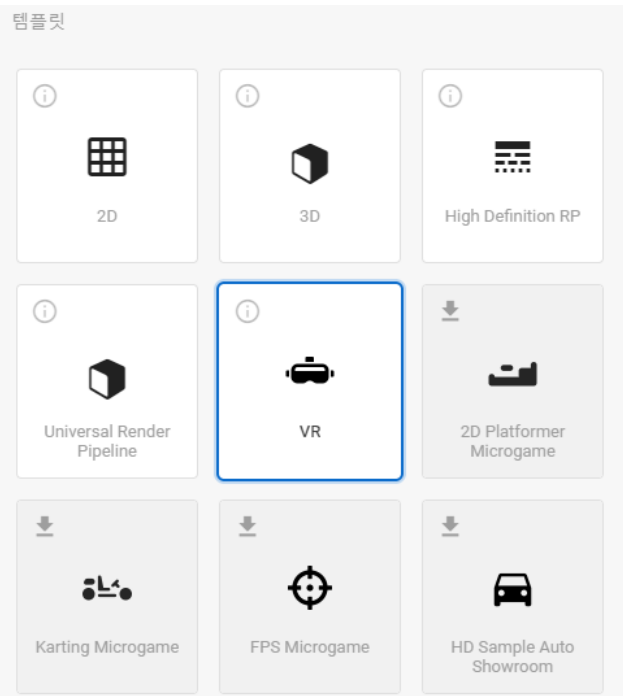


- Unity에서 실행을 위한 설정



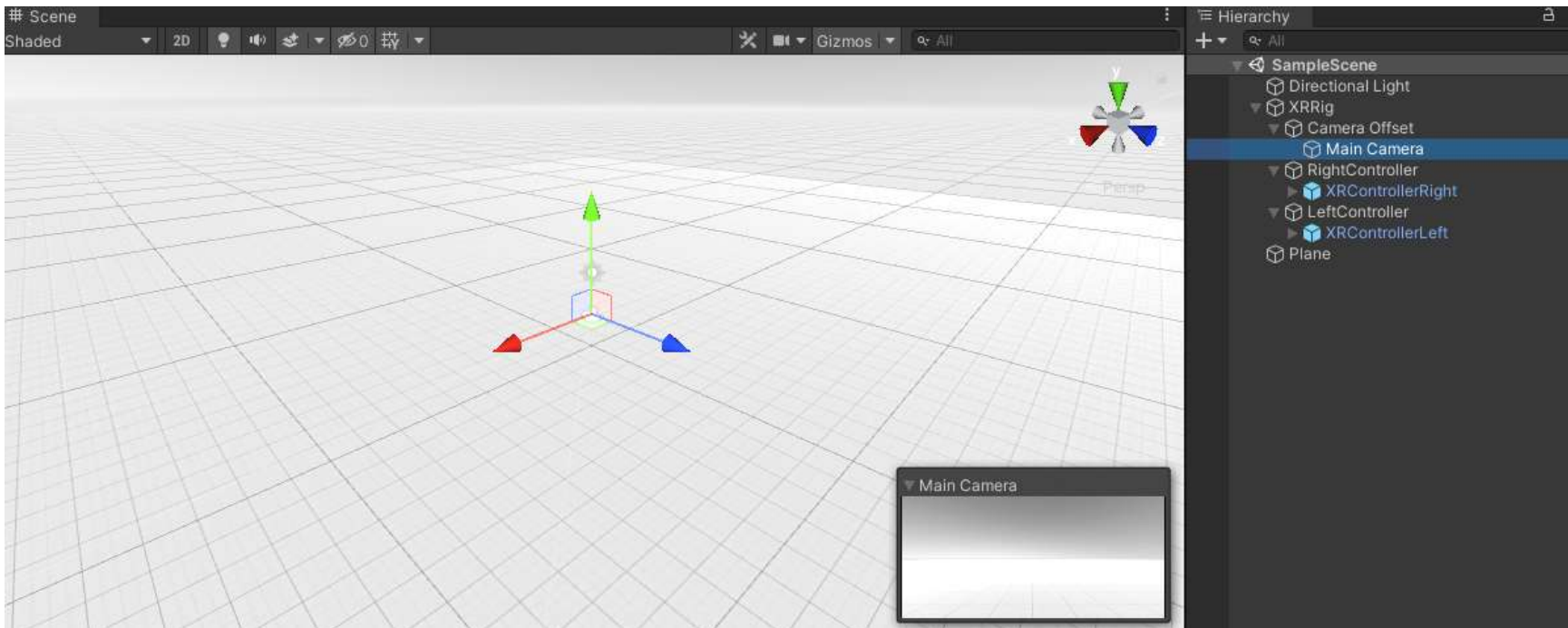
Unity Project Oculus Setup - 2021

- 템플릿
 - VR 템플릿으로 프로젝트 생성
 - Edit → Project Settings → XR Plug-in Management: Oculus 체크



Oculus in Unity3D

- SampleScene
 - 유니티에서 제공하는 샘플 장면을 활용하면, VR HMD와 바로 연결하여 디스플레이 및 컨트롤러 연동이 가능
 - 하지만, 오쿨러스의 주요 기능 사용에는 제한



Oculus in Unity3D

- Oculus Integration for Unity
 - Download the Oculus Integration
 - Asset Store → Oculus Integration



Oculus Integration

Oculus

★★★★☆ (572) | ♥ (5581)

FREE

👁 3700 views in the past week

Open in Unity



License agreement

Non standard EULA

File size

366.9 MB

Latest version

33.0

Latest release date

Oct 1, 2021

Supported Unity versions

2019.4.4 or higher

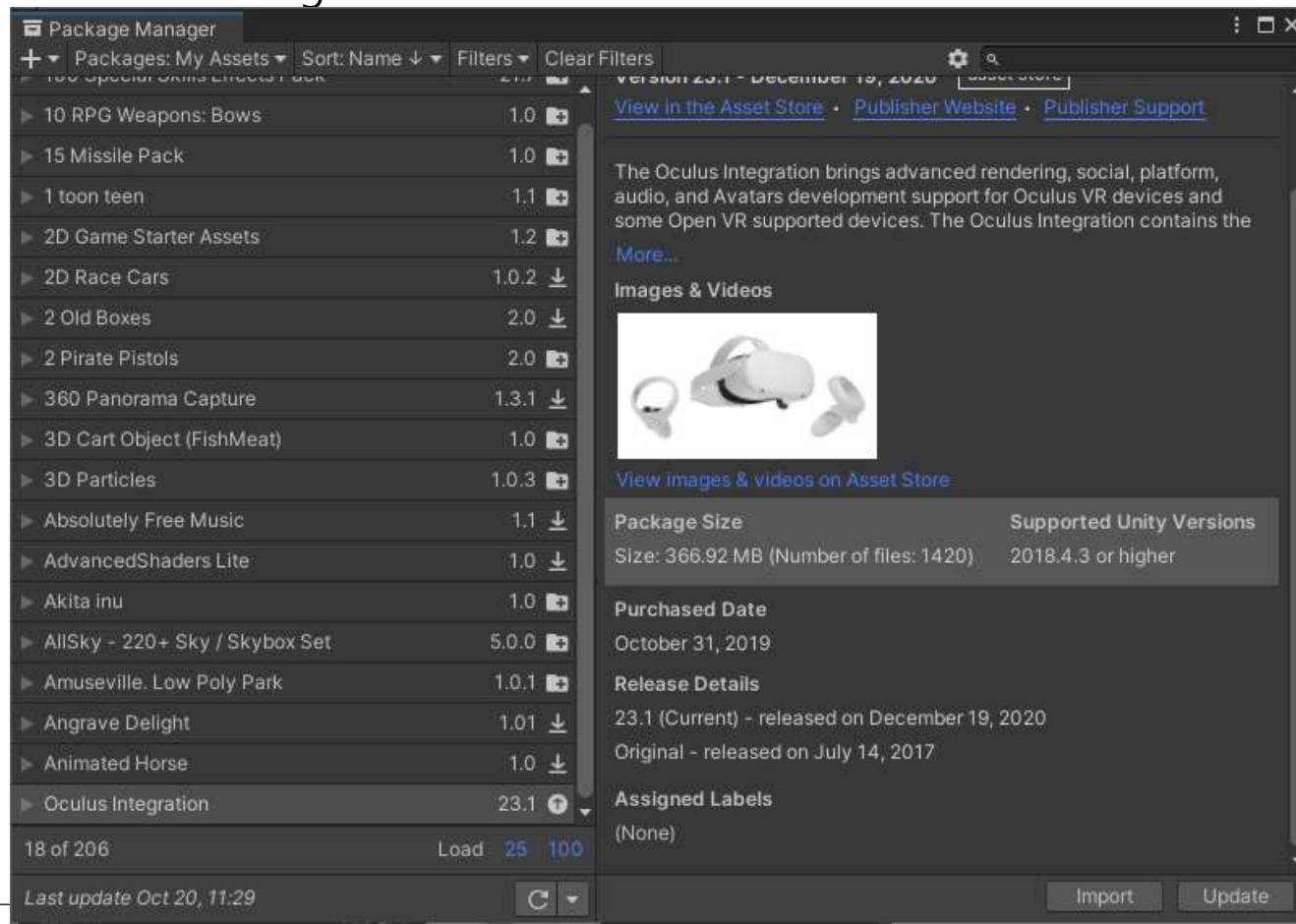
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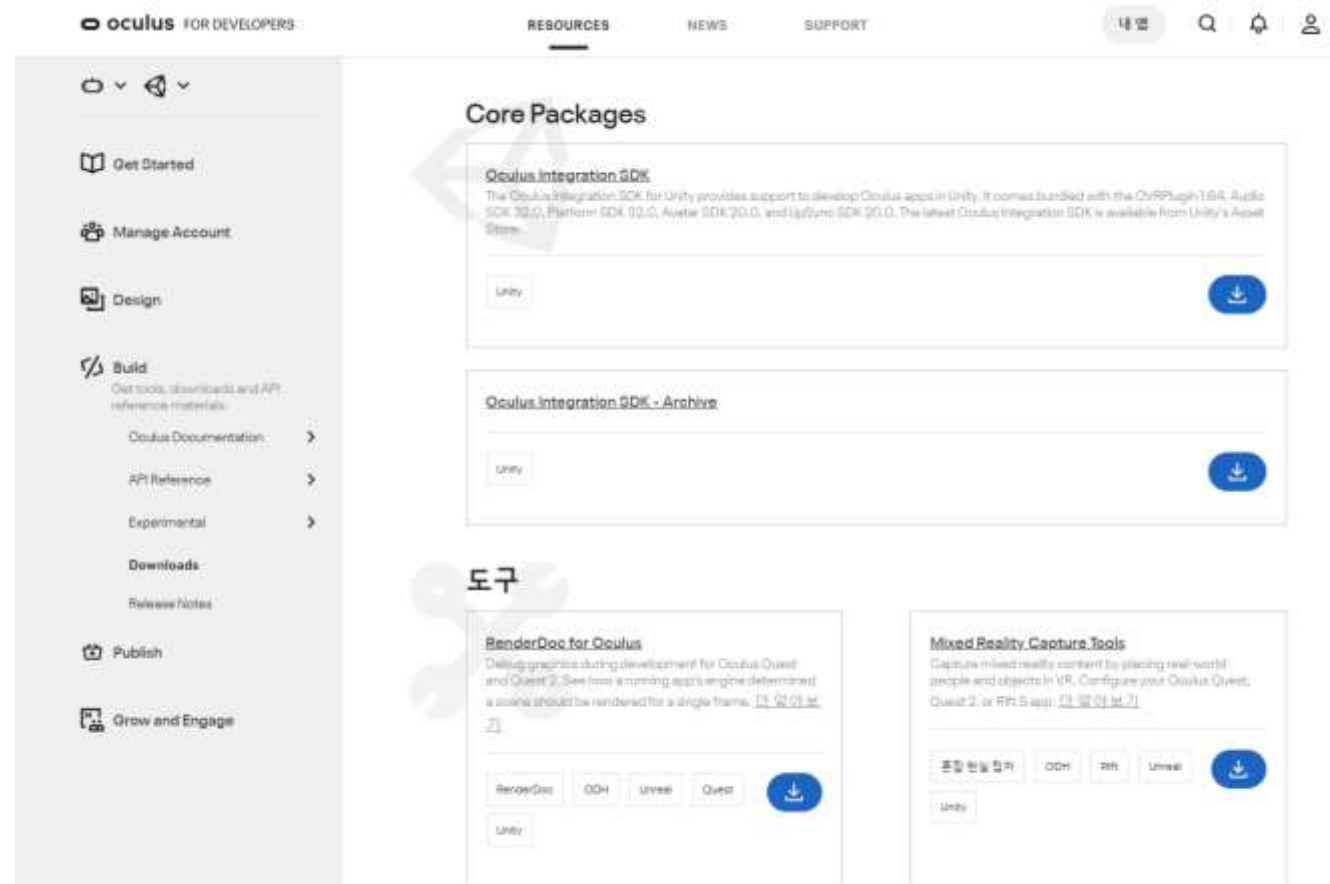
Oculus in Unity3D

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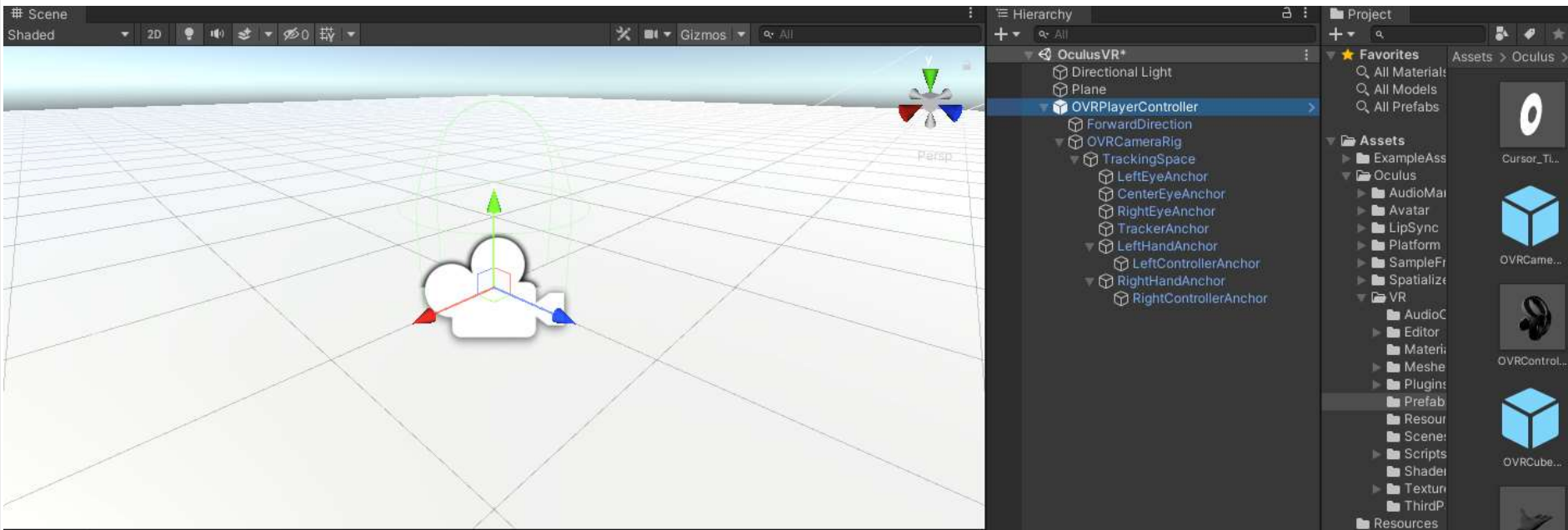
Oculus in Unity3D – 2019.3이하

- Oculus Developer
 - <https://developer.oculus.com/downloads/unity/>
 - SDK를 직접 다운받아 임포트



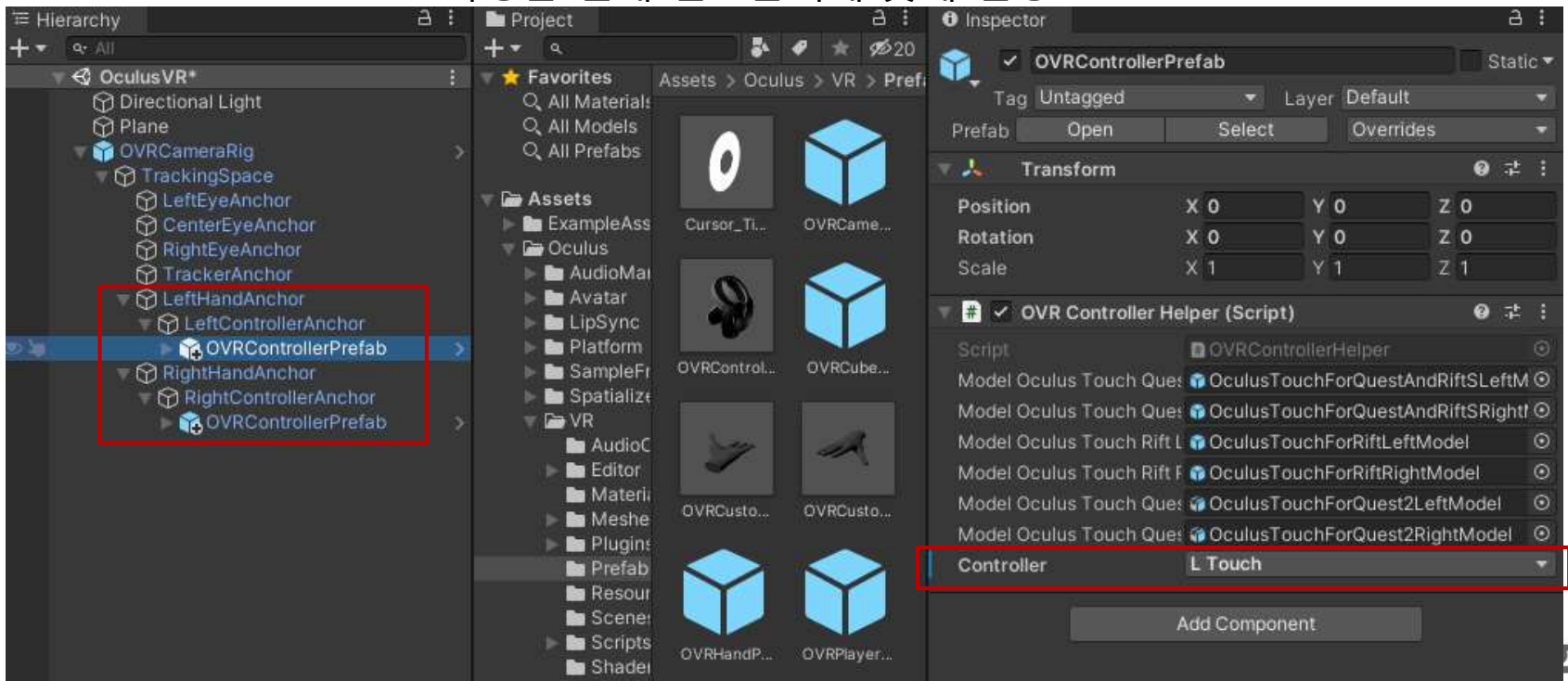
Oculus in Unity3D

- OVR Player
 - Assets → Oculus → VR → Prefab → OVRPlayerController
 - Scene에 등록
 - Oculus 카메라 정보, 플레이어 이동 등에 기능이 구현되어 있음



Oculus in Unity3D

- OVR Player + Hand Model: Default Mode
 - Assets → Oculus → VR → Prefab → OVRControllerPrefab
 - OVRCameraRig → TrackingSpace → Left(Right)HandAnchor → Left(Right)ControllerAnchor 의 자식 객체로 등록
 - controller 속성은 현재 컨트롤러에 맞게 변경



컨트롤러 입력의 경우 HMD를 착용한 상태여야 함!!

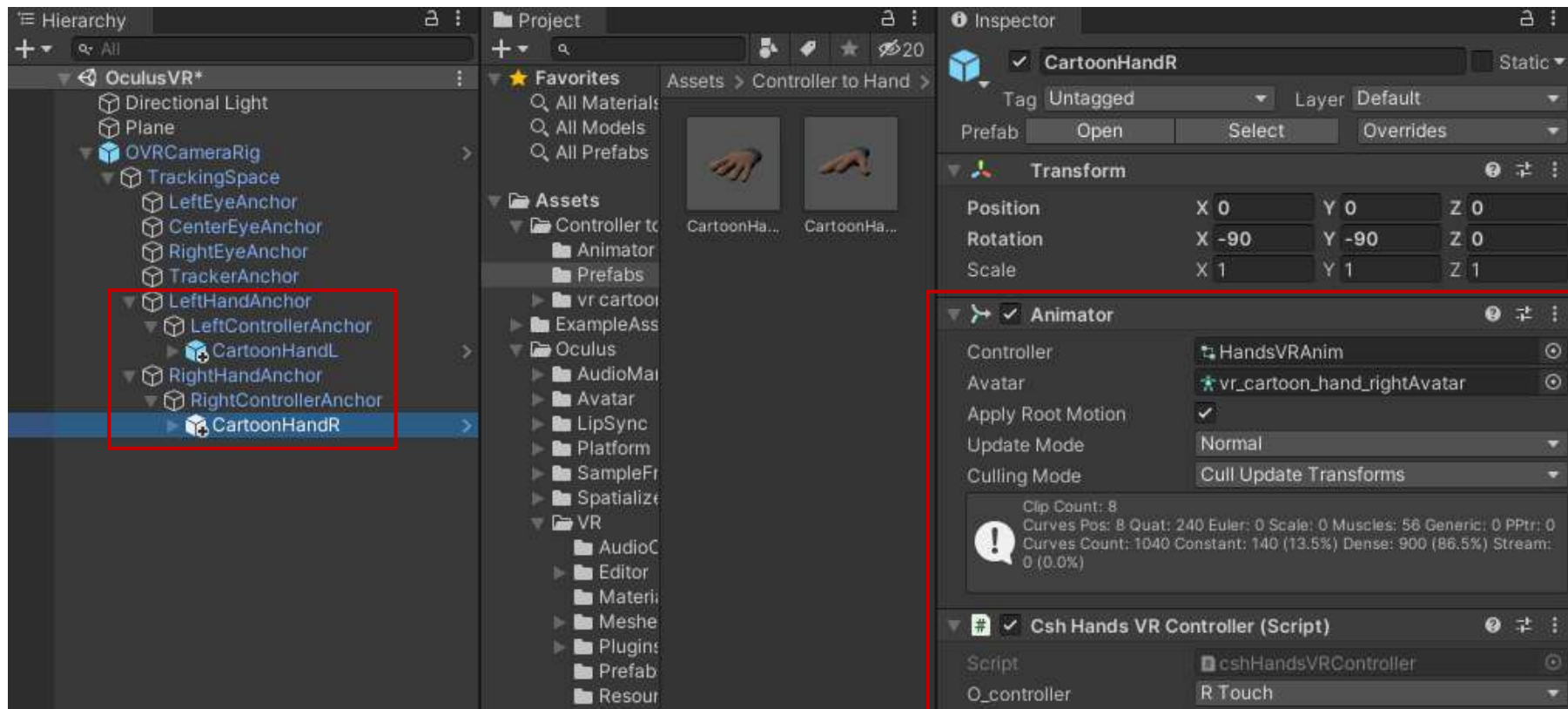
Oculus in Unity3D

- OVR Player + Hand Model: Default Mode



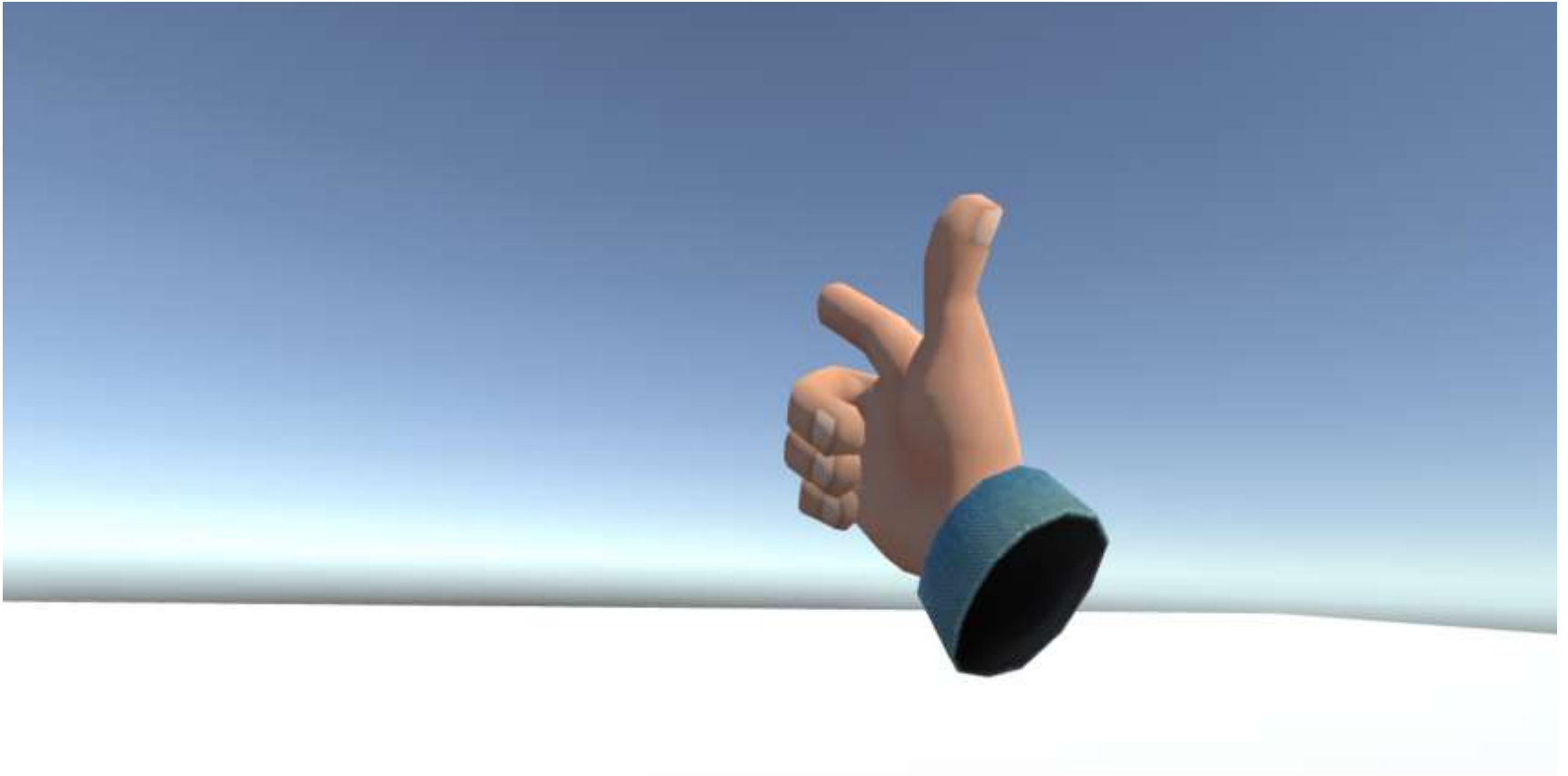
Oculus in Unity3D

- OVR Player + Hand Model:
 - Controller to Hand 폴더 추가
 - Prefab 폴더의 손 모델을 좌/우 각각 등록



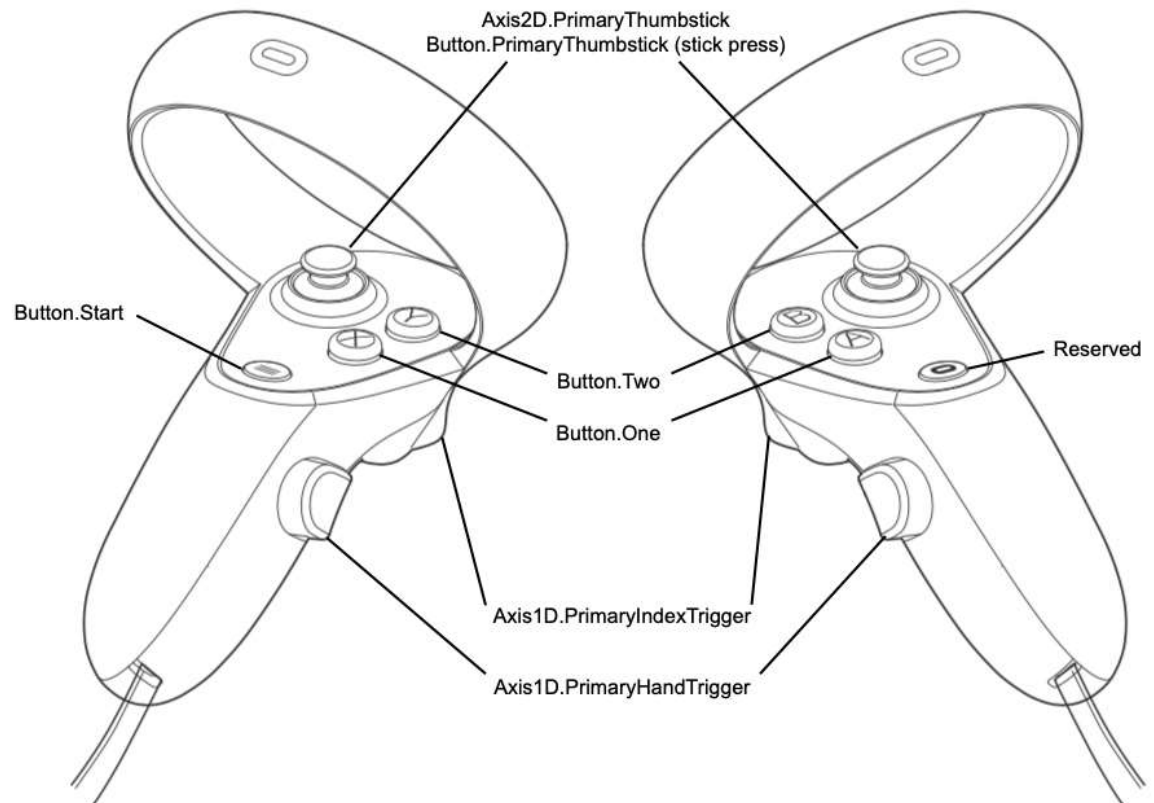
Oculus in Unity3D

- OVR Player + Hand Model



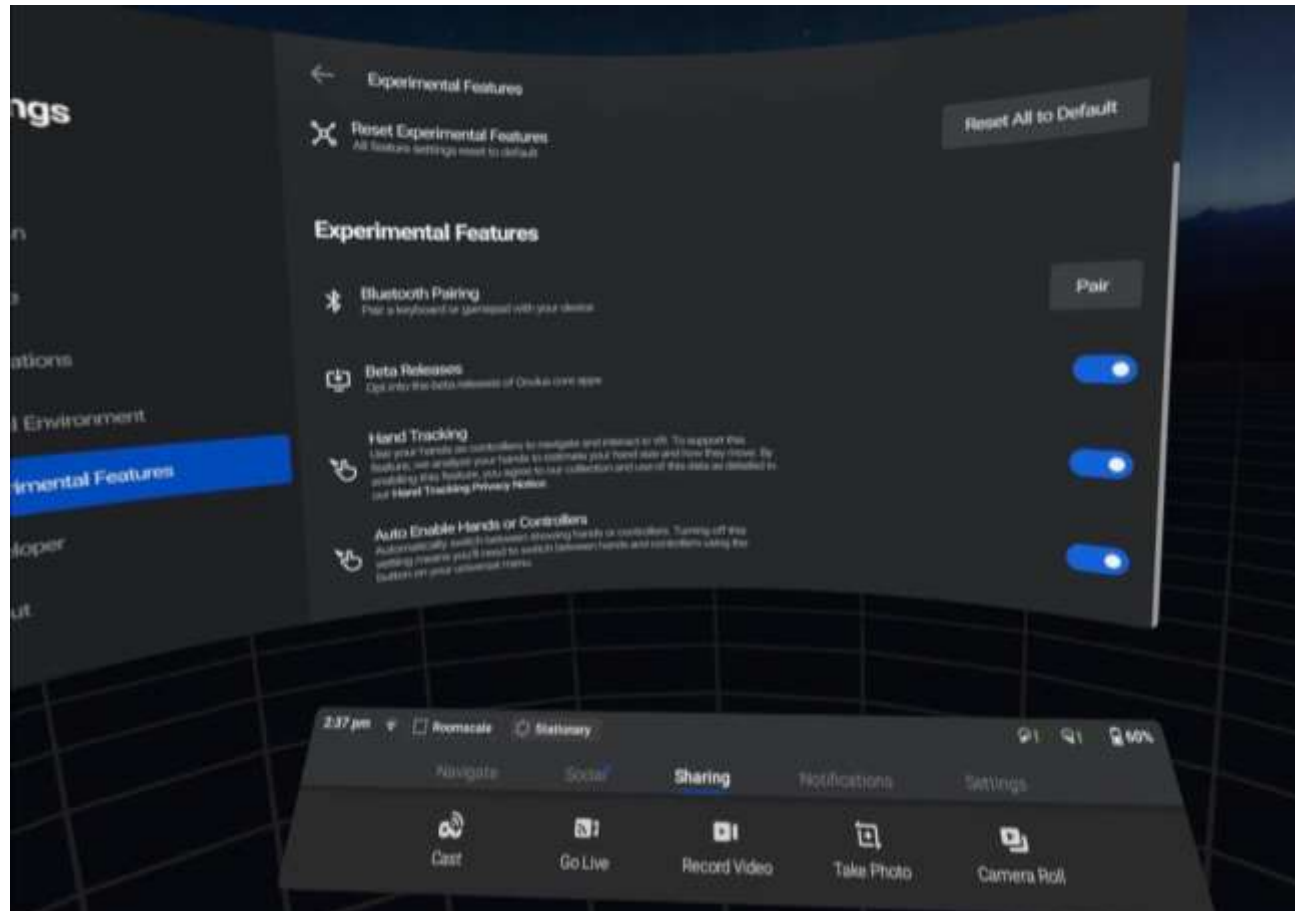
Oculus in Unity3D

- OVR Input
 - 유니티에서 오쿨러스 컨트롤러 키 입력 설정
 - https://developer.oculus.com/documentation/unity/unity-ovrinput/?locale=ko_KR



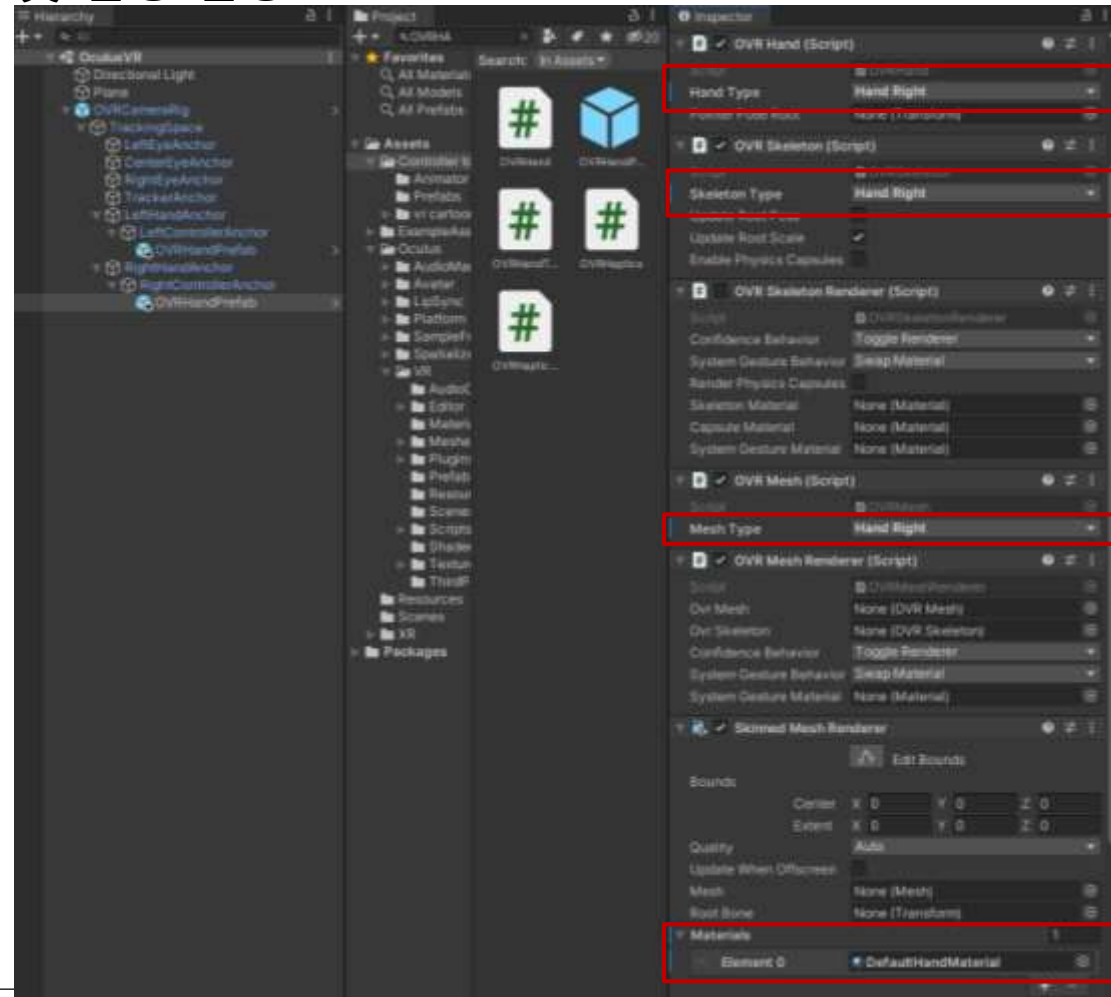
Oculus in Unity3D

- OVR Player + Hand Tracking:
 - 오쿨러스 퀘스트에서 지원하는 손 추적 기능
 - 손 추적 기능 활성화



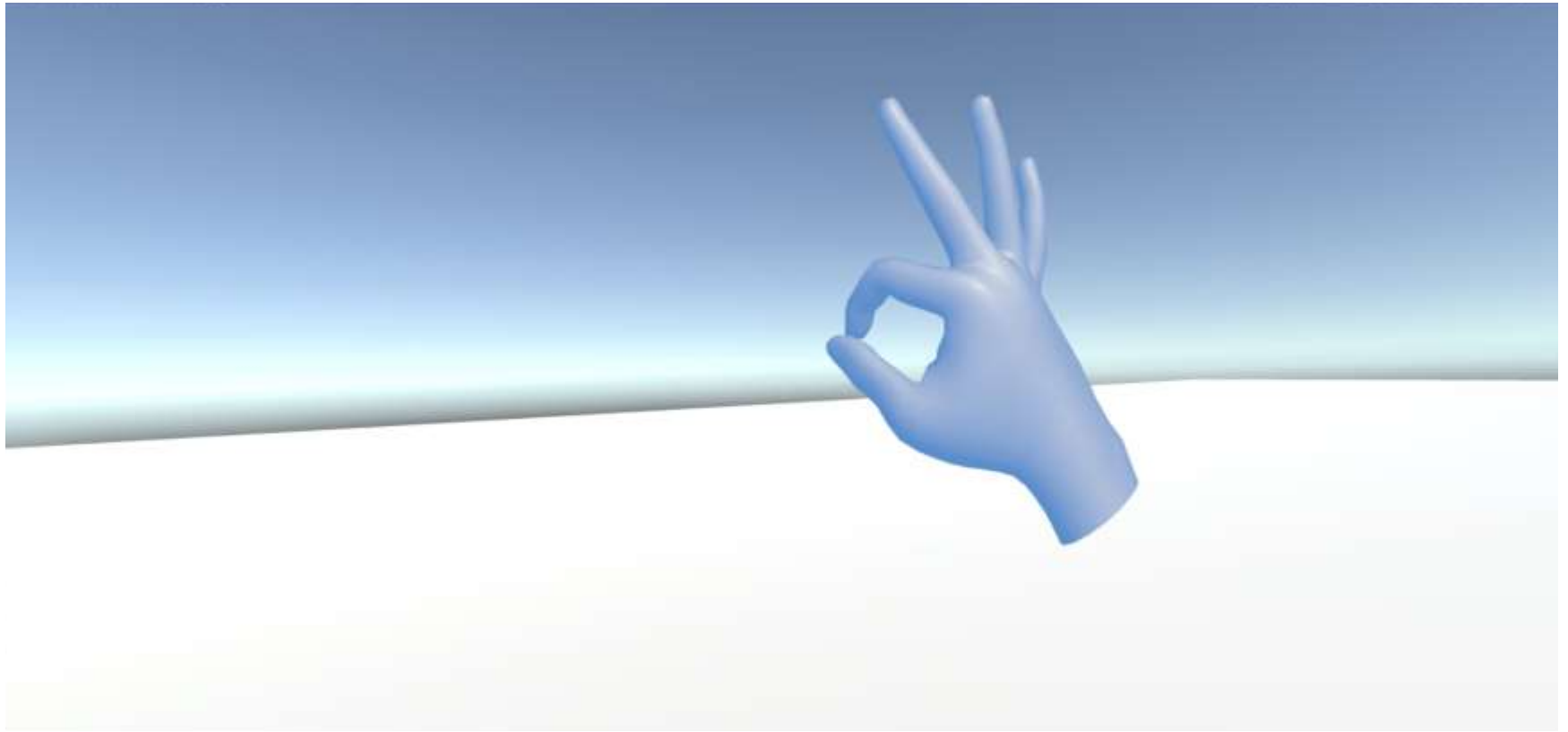
Oculus in Unity3D

- OVR Player + Hand Tracking:
 - OVRHandPrefab 등록 및 설정 변경



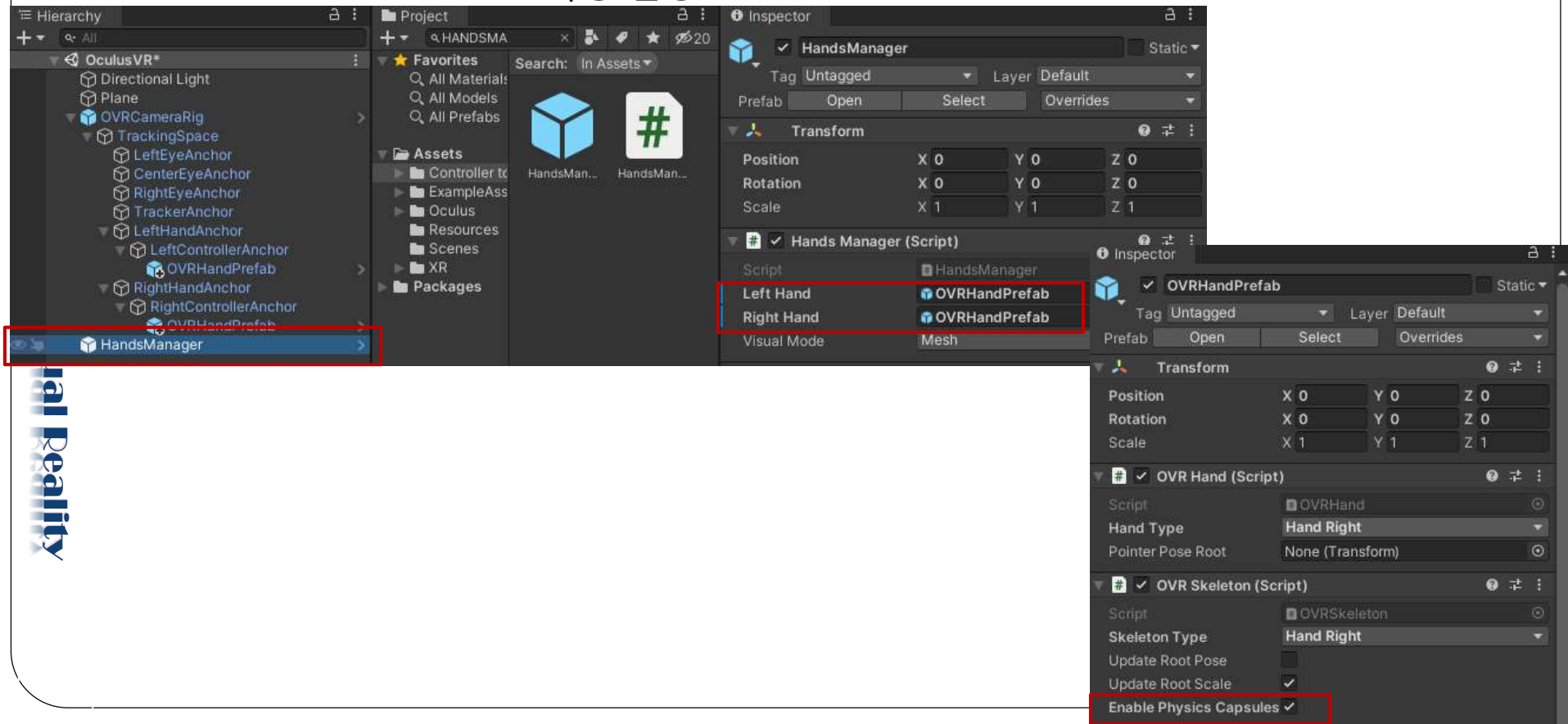
Oculus in Unity3D

- OVR Player + Hand Tracking



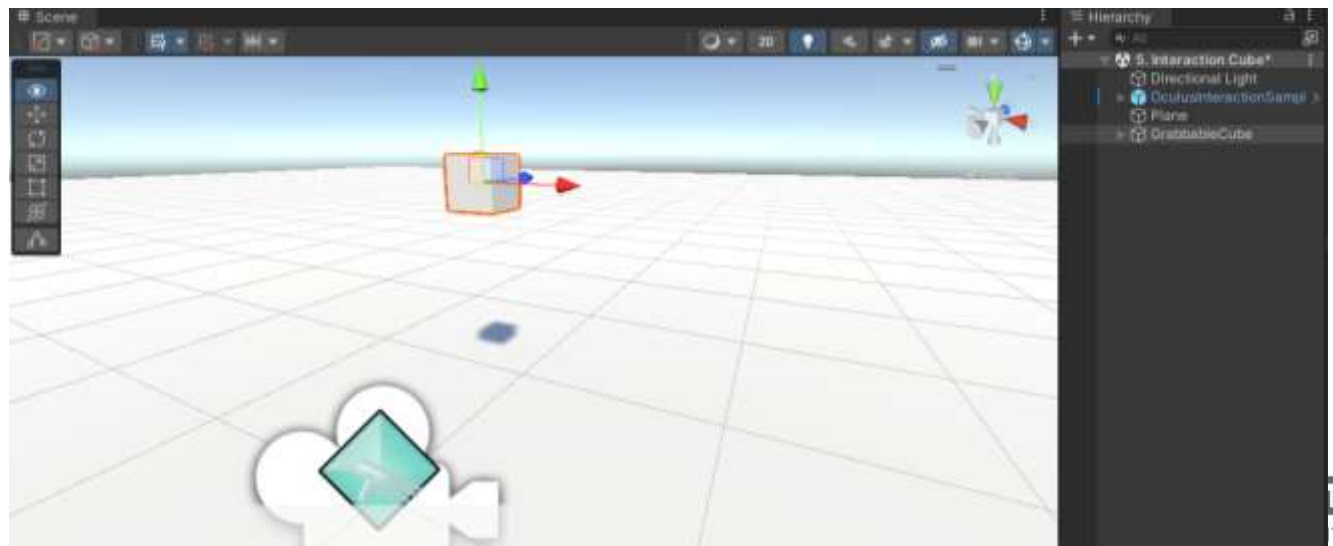
Oculus in Unity3D

- OVR Player + Hand Tracking:
 - 객체와의 상호작용
 - Hand Manager 프리팹 등록
 - OVR Skeleton 속성 설정



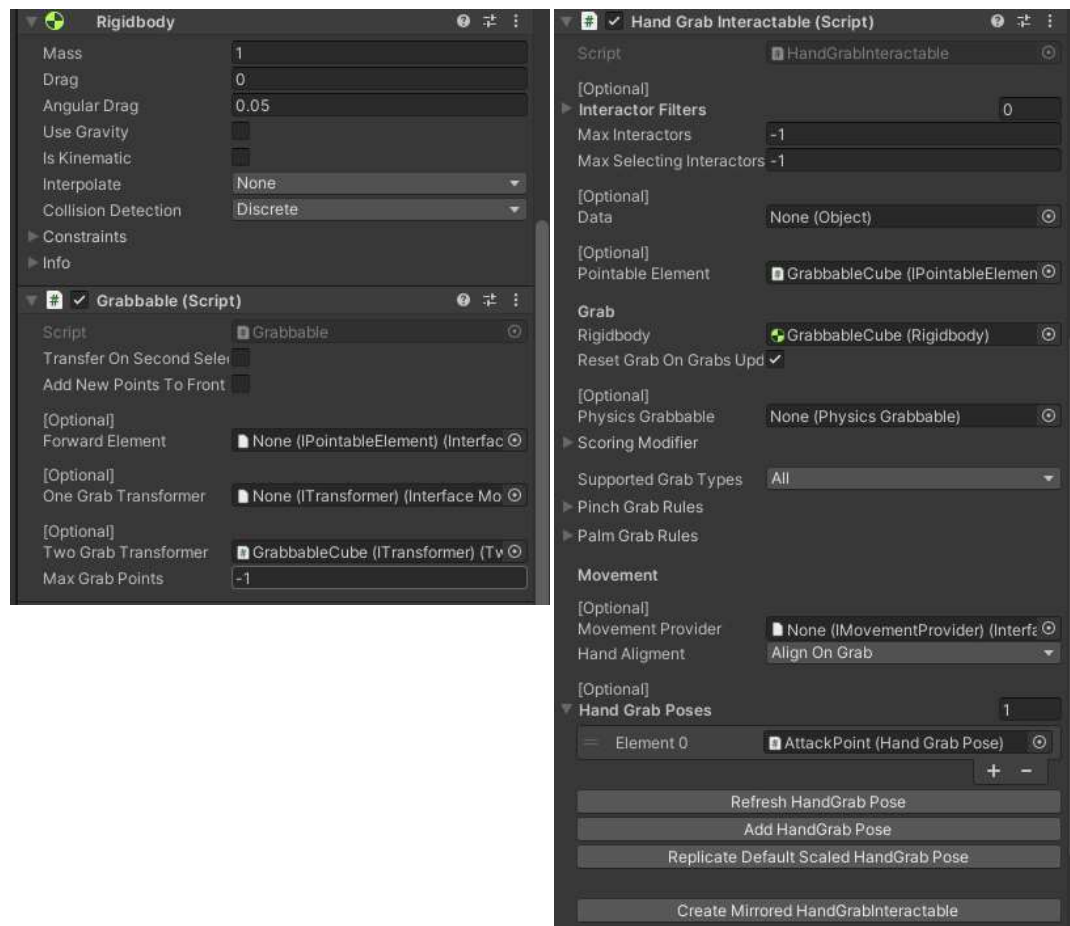
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction
 - 상호작용을 위한 장면 설정
 - 바닥
 - Plane
 - 상호작용 객체: 3D Object → Cube
 - 컴포넌트 추가
 - Rigidbody: Use Gravity → Unchecked
 - Grabbable 스크립트
 - HandGrabInteractable 스크립트



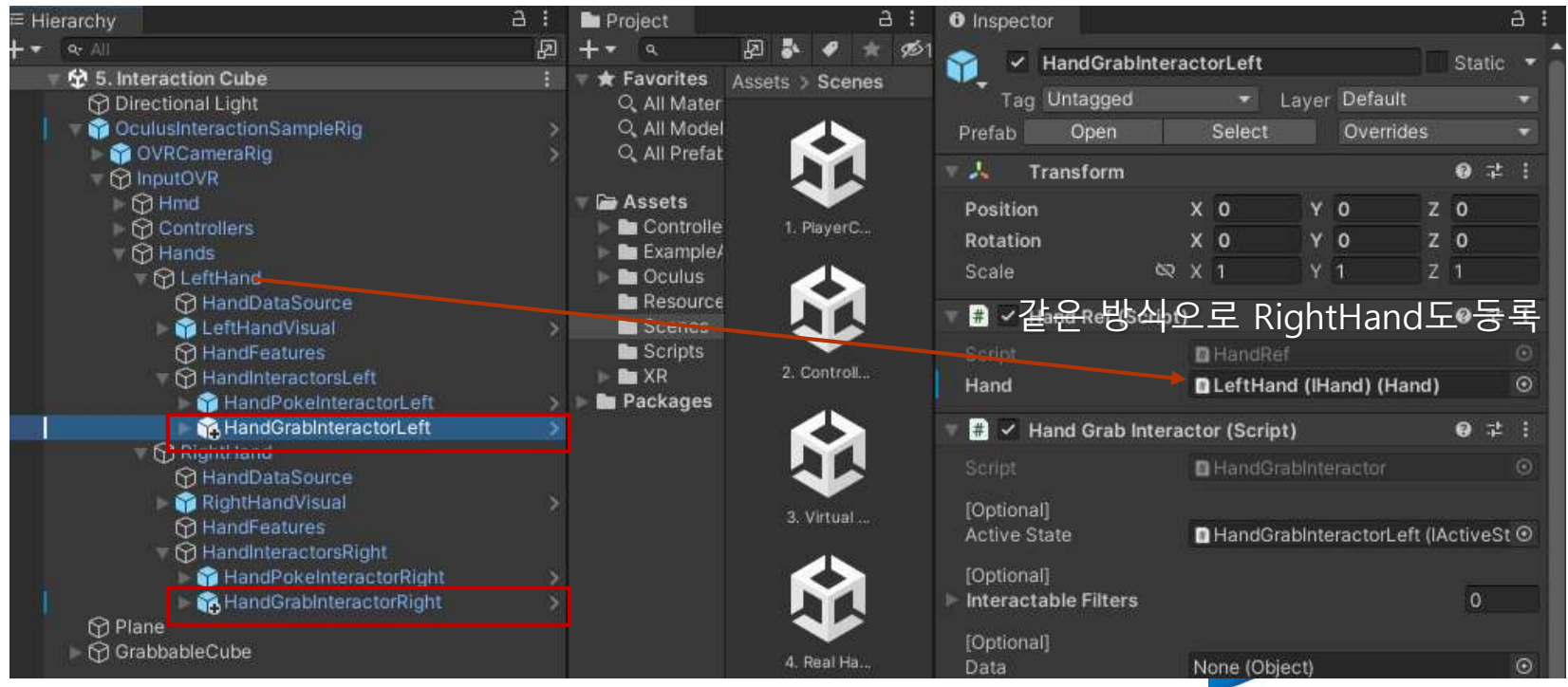
Oculus in Unity3D

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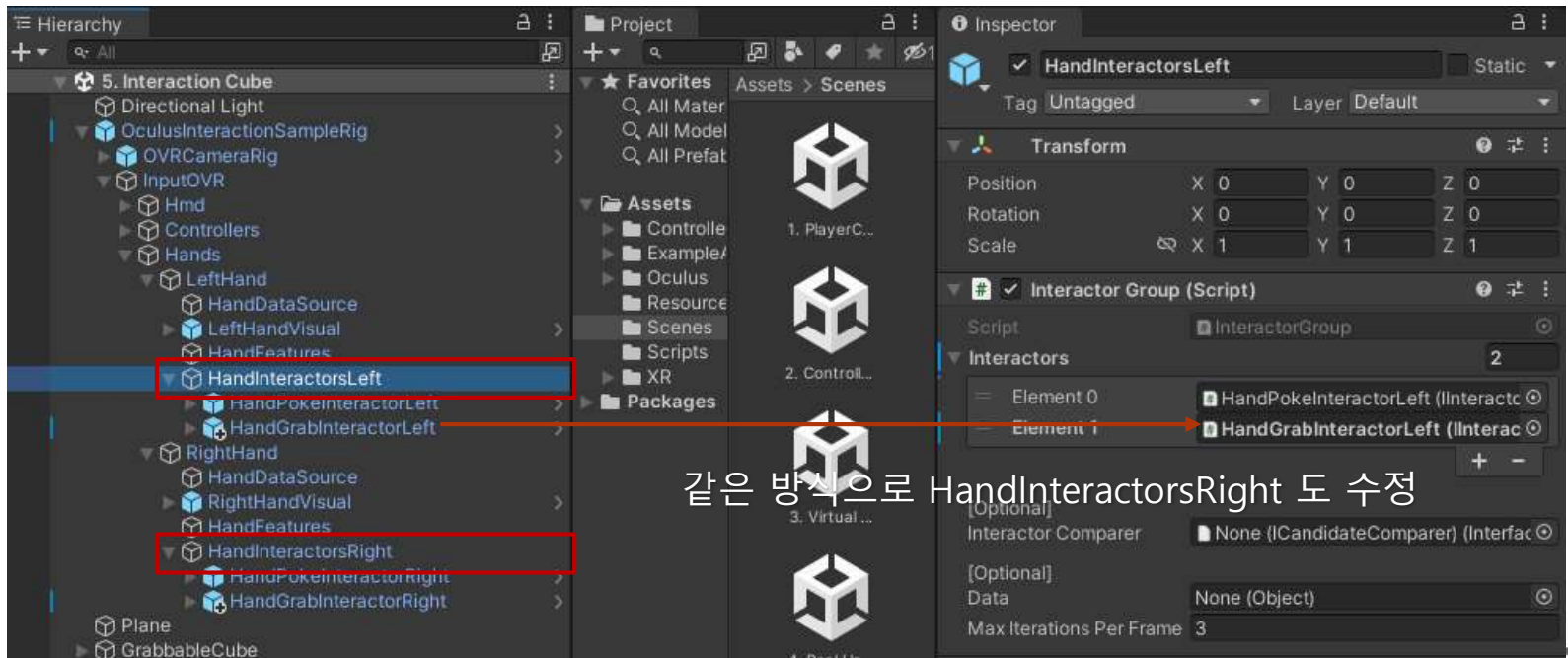
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction
 - 상호작용 기능을 포함한 가상현실 카메라
 - OculusInteractionSampleRig
 - 그랩 동작을 위한 상호작용 설정
 - HandInteractorsLeft/Right의 자식으로 HandGrabInteractor 추가
 - HandInteractorsLeft/Right → InteractorGroup 요소 추가



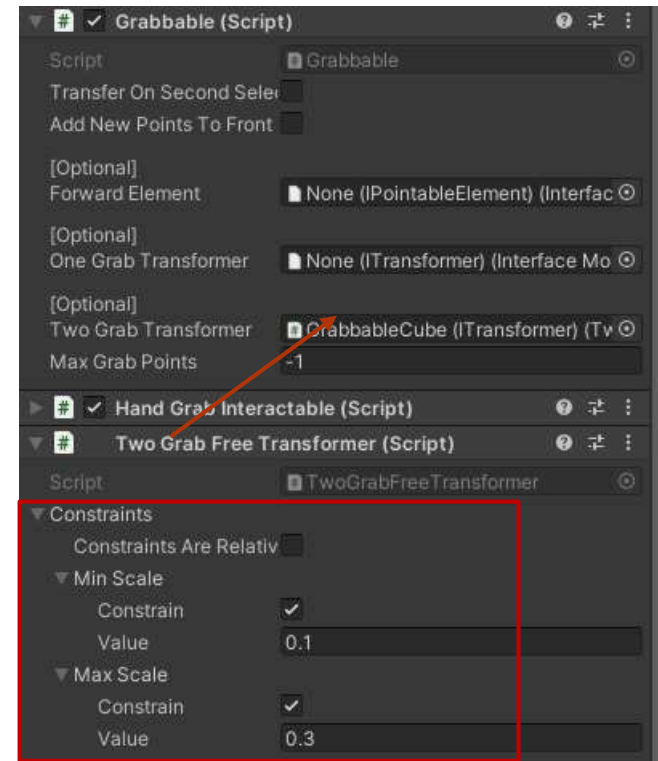
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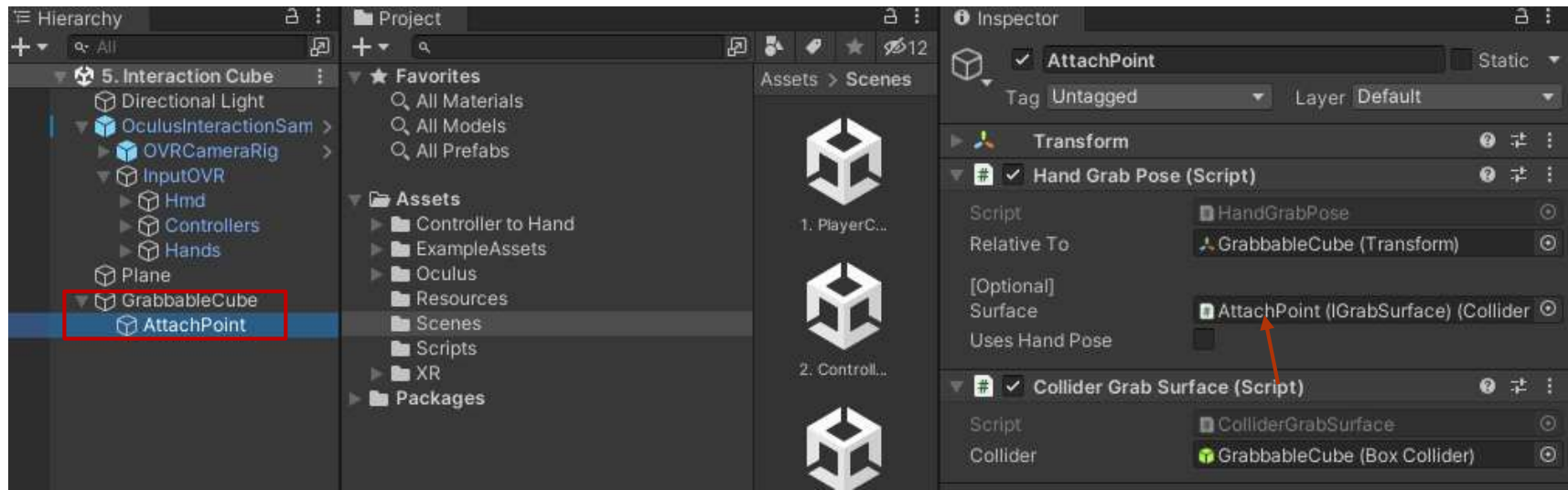
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction
 - 크기제어 상호작용 추가
 - 상호작용 객체에 컴포넌트(스크립트 추가)
 - TwoGrabFreeTransformer → 값 수정
 - Grabbable의 속성 값으로 등록



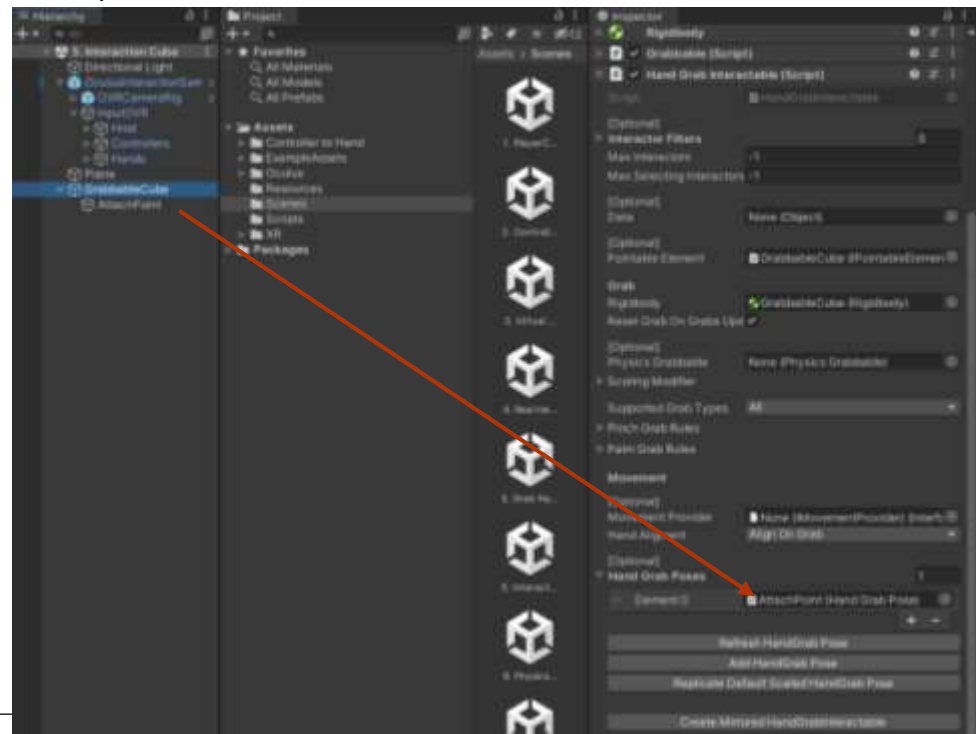
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction
 - 크기제어 상호작용 추가
 - AttachPoint
 - 상호작용 객체의 자식 → Create Empty
 - HandGrabPose, ColliderGrabSurface 스크립트 추가
 - 상호작용 객체 → HandGrabInteractable 스크립트
 - Hand Grab Poses: AttachPoint 등록



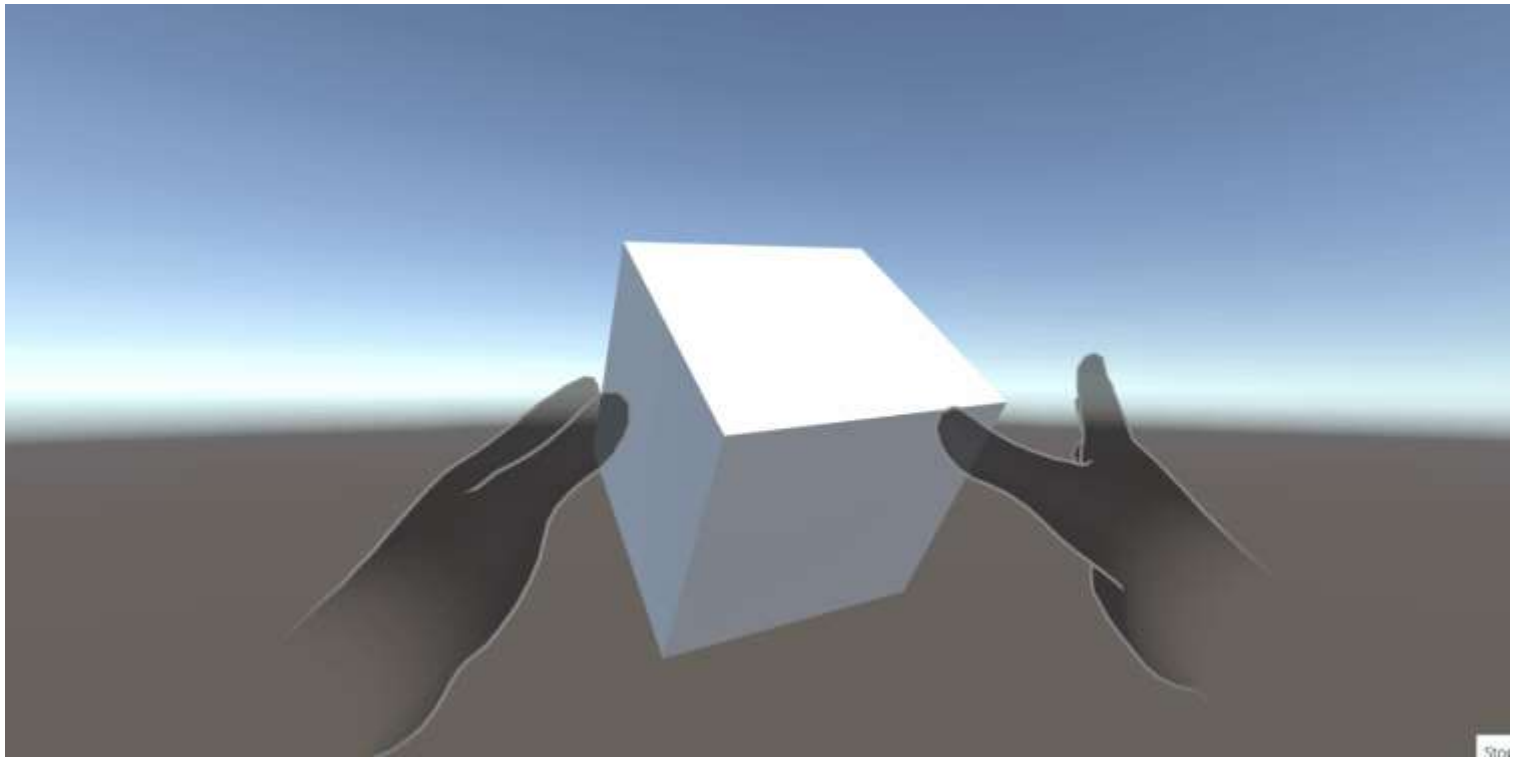
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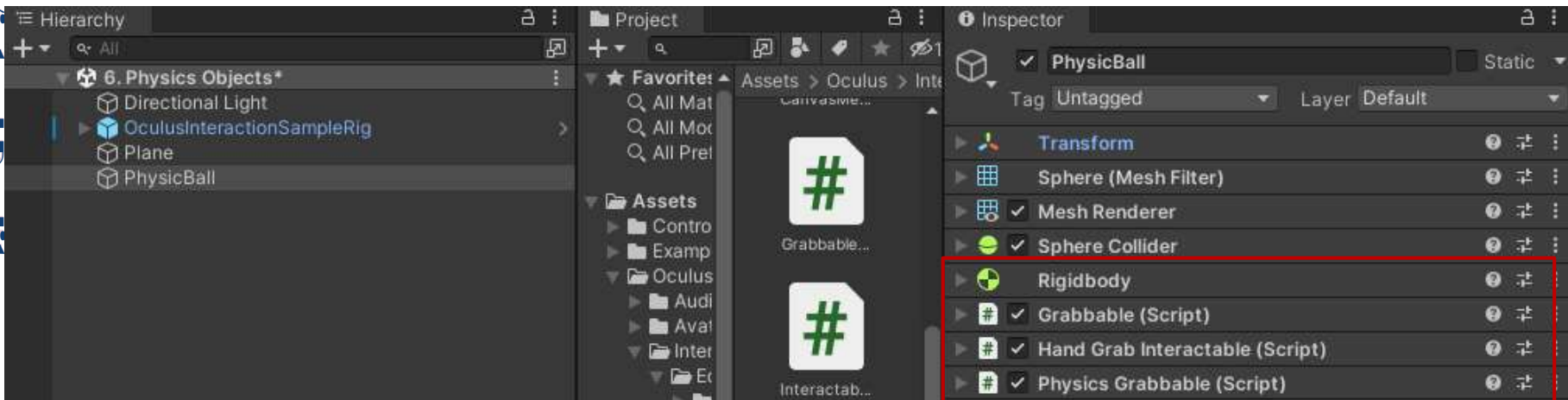
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction
 - 상호작용 결과



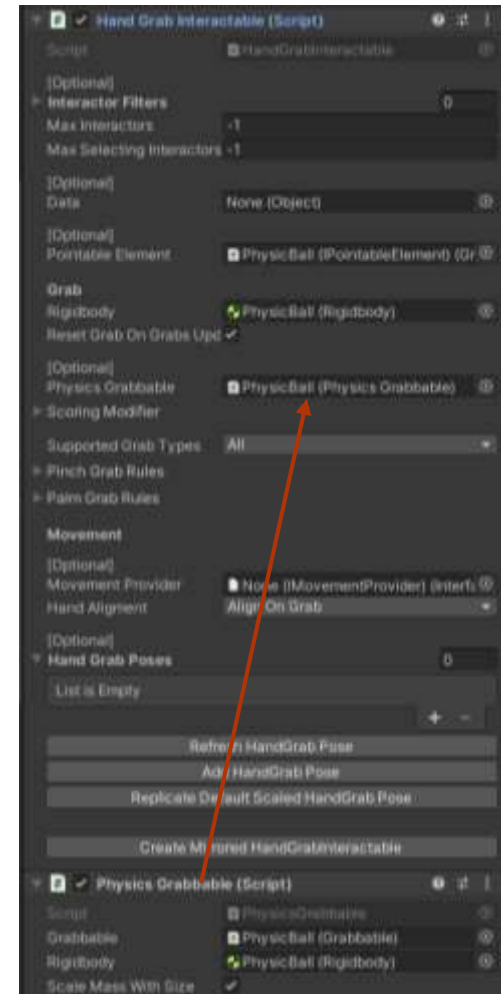
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction + Physics
 - 상호작용을 위한 장면 설정
 - 바닥
 - Plane
 - 물리 상호작용 객체: 3D Object → Sphere
 - 컴포넌트 추가
 - Rigidbody
 - Grabbable
 - HandGrabInteractable
 - PhysicsGrabbable → HandGrabInteractable의 Physics Grabbable 속성으로 등록



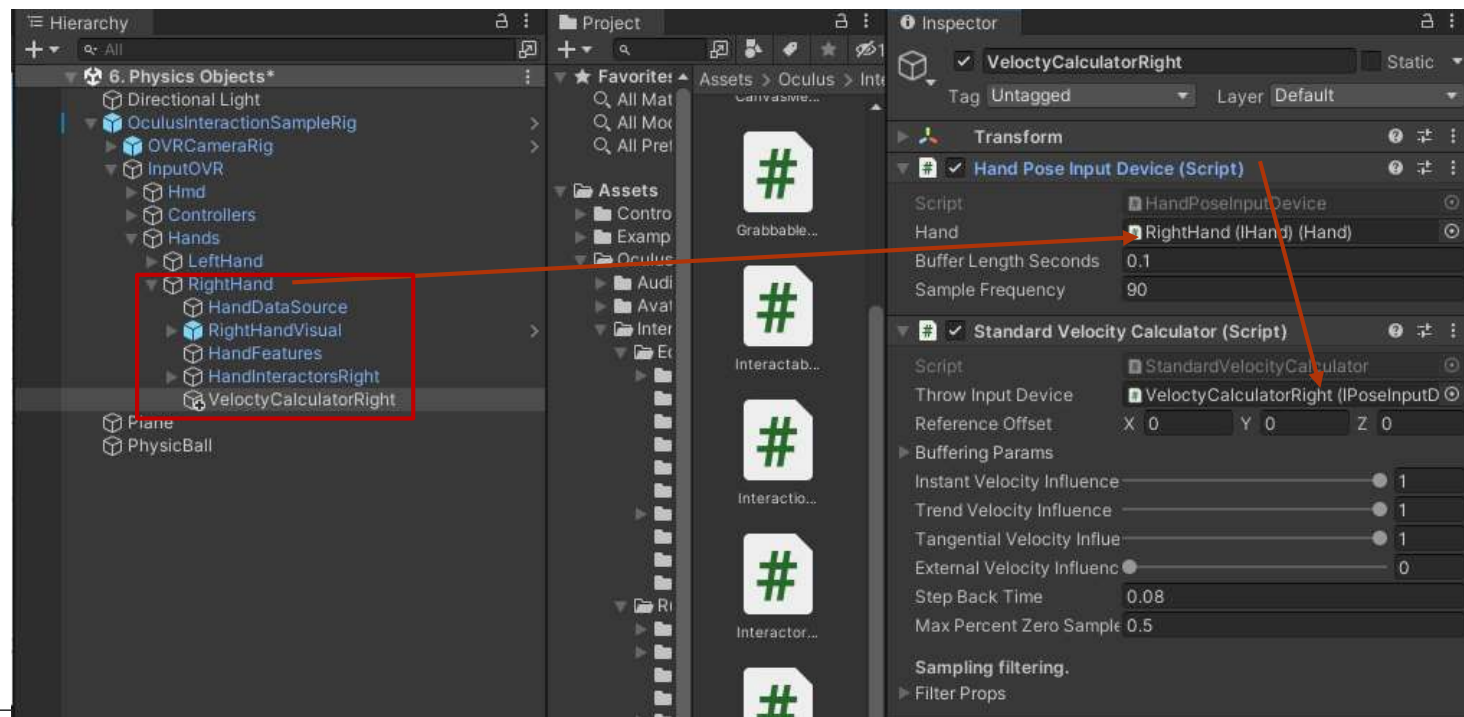
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction + Physics
 - 상호작용을 위한 장면 설정



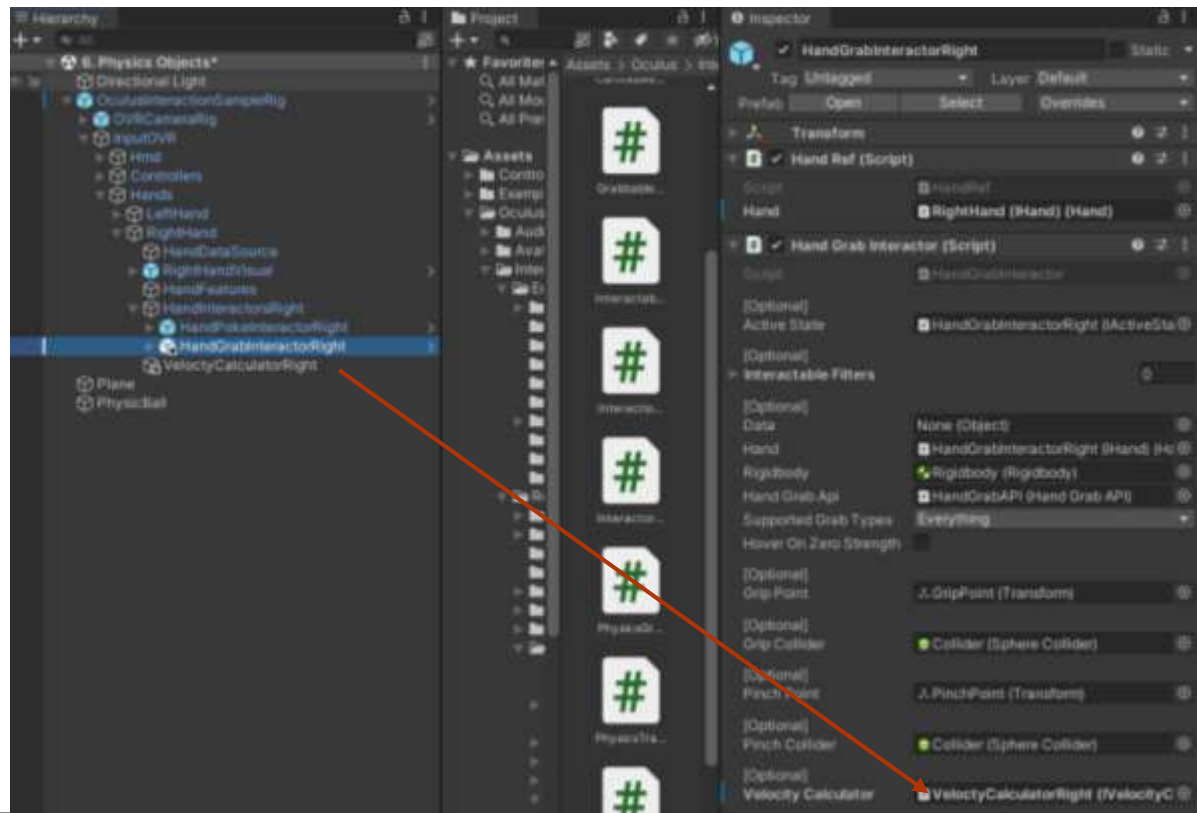
Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction + Physics
 - 손의 물리 계산 설정
 - 물리 움직임을 적용할 손
 - Right(또는 Left)Hand의 자식 → Create Empty
 - 이름: VelocityCalulatorRight(or Left) 추가
 - HandPoseInputDevice: Hand 값 등록
 - StandardVelocityCalculator: Throw Input Device 값 등록



Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction + Physics
 - 손의 물리 계산 설정
 - 물리 움직임을 적용할 손
 - HandGrabInteractorRight(or Left) → HandGrabInteractor 스크립트
 - Velocity Calculator 값 등록



Oculus in Unity3D

- OVR Player + Hand Tracking + Interaction + Physics
 - 물리 기반 상호작용 결과

