Chess In VR

A fully-featured VR compatible chess engine, game, and AI opponents.

V 1.0.0

- Incomplete documentation parts will be improved over time.
- Get the most up to date documentation by clicking here.
- If you have any questions or need assistance email support at intuitivegamingsolutions@gmail.com.

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API References

3.a. API Reference: ChessEngine

- The scripting reference for the Chess Engine
- Responsible for the underlying chess game simulation.
- Google Drive: ChessEngine API Reference

3.b. API Reference: ChessEngine.AI

- The scripting reference for the Chess Engine AI.
- Responsible for chess AI.
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3.c. API Reference: Physics Hand

- The scripting reference for the Physics Hand.
- Responsible for the physics based hands.
- Google Drive: Physics Hand API Reference

3.d. API Reference: Grab System

- The scripting reference for the Grab System.
- Responsible for grabbing & throwing interactions.
- Google Drive: Grab System API Reference

3.e. API Reference: Adaptive Hands

- The scripting reference for Adaptive Hands.
- Responsible for animating the hands and fingers.
- Google Drive: Adaptive Hands API Reference

Getting Started

4.a. Importing the Asset

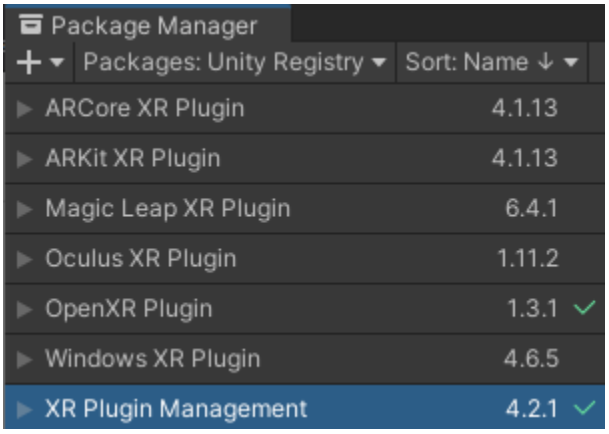
There are 2 ways to import the 'Chess In VR' package.

a. (Recommended) Using the Unity Editor ‘Package Manager’.
    i. Open the Windows→Package Manager using the Unity editor toolbar.
    ii. In the upper-left corner of the Package Manager window select ‘Packages: My Assets’.
    iii. Search for ‘Chess In VR’ in the list or use the search bar in the window.
    iv. Select the asset in the package manager, select ‘Download’.
    v. After the package has finished downloading click ‘Import’ to import it into the project.
b. Importing ChessInVR.unitypackage
    i. Using the Unity Editor’s toolbar select Assets→Import Package
    ii. In the file explorer that opens navigate to ChessInVR.unitypackage
    iii. Double click the package and import it.

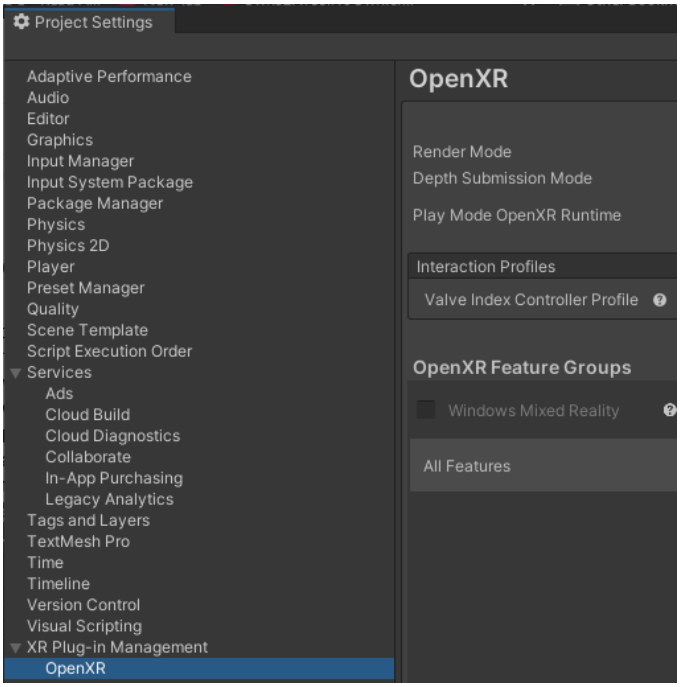
4.b. Setting Up VR In Your Project

4.b.i. Setting Up XR Plugin Management & OpenXR

- You may skip this step if VR is already configured in your project.
- Start a new (or open an existing) Unity VR project.
    - You can start a VR project using the 'New Project' feature in the Unity Hub.
    - You can ***upgrade an existing non-VR project*** by opening the 'Package Manager' window and installing the '***XR Plugin Management***' package from the 'Unity Registry'.
        - Install another package such as OpenXR (recommended), SteamVR, or similar.



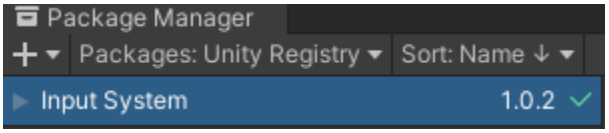
        - The last step to setting up 'XR Plugin Management' is to configure your chosen XR plugin – in the case of the screenshot below the 'OpenXR Plugin' was used.



- More detailed steps can be found on google regarding setting up VR in an existing Unity project.

4.b.ii. Import The New 'Input System'

- If you want to use the provided demo content make sure your project has the **new unity input system** enabled *(it may be enabled by default in newer versions of Unity)* so make sure you have the '**Input System**' package installed in your project if you want to use the provided demo content.
- Simply navigate to 'Windows → Package Manager' and import the 'Input System' package from the 'Unity Registry'.



You are now done 'getting started'.
Check out any of the demo scenes or start making your game!

Game Management Components

Components that attach to the chess game manager.

5.a. The PieceGrabilityManager Component

- A component that is responsible for managing the 'grabEnabled' state of GrabbableObjects that also contain VisualChessPiece components.
- This component should be attached to the same GameObject as the ChessGameManager component.

Chess Player Components

Components that attach to the player.

6.a. Chess Player Calibration Components

6.a.i The ChessPlayerCalibrator Component

- Calibrates the chess player's position.
- Used in local play or versus AI games to calibrate the position for the local player to:
    - The current turn's team reference if neither player, or both players are AI.
    - The non-AI team's reference if only a single player is AI.

6.a.ii The NetworkChessPlayerCalibrator Component

- Calibrates the local chess player's position.
- Used in networked games to calibrate the position for the local player relative to the reference set for the local player's team.

Chess Hand Components

Components that attach to the player's VR hands.

7.a. The ChessGrabber Component

- A component that is attached to the same GameObject as the hand's Grabber (RayGrabber) that manages grab-ability and forced releasing of VisualChessPieces that also contain a GrabbableObject component.

Chess Table Tile Components

Components that attach to chess table tiles.

8.a. The ChessTilePieceTrigger Component

- A component that is attached to the same GameObject as a ***trigger*** Collider for a chess table tile.
- This component is responsible for detecting when a chess piece is being placed on a given tile.

FAQ

(Frequently Asked Questions)

Q: Does this asset work with the Rift, Quest, Valve Index, Vive, etc?
A: Yes! The chess engine works with all devices that are compatible with the '*com.unity.xr.management*' package. *Compatibility with other XR management plugins such as 'Oculus Integration' is available upon request.*