Guide on Preparing 3D Models for VIVE Sync

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About this Guide

VIVE Sync allows users to import 3D models into the virtual space. After importing a 3D model, the user can move, scale, and rotate the object.

This guide describes the supported formats and preparation guidelines for 3D models. If you encounter any problems or have any requests, please contact the Sync team at Sync_support@htc.com.

Supported File Formats

VIVE Sync currently supports the file formats below. Support for additional 3D model types will expand over time.

Unity Asset Bundle

Supports Unity standard and custom shaders, including animations.

ZIP

If your 3D model has separate texture files, the 3D model and textures need to be packaged into a ZIP file. VIVE Sync supports BaseColor Map only.

3D formats supported	FBX, OBJ, glTF, glb
2D formats supported	PNG JPG (baseline & progressive - 12 bpc/arithmetic not supported) BMP (non-1bpp, non-RLE) TGA

Unpackaged Model Files

If your 3D model doesn't have separate texture files, it doesn't need to be packaged into a ZIP file.

3D formats supported	FBX, OBJ, glTF,glb

Recommendations and Limitations

To ensure you can load your 3D model and all meeting participants can view it, follow the recommended 3D model specifications below.

For the PC VR platform, large files can be loaded in VIVE Sync on the computer, depending on the system memory. You can use the recommended 3D model specifications for PC VR, if all participants are using PC VR headsets.

Due to performance considerations on all-in-one VR and mobile platforms, there are limitations to the 3D model size and content. If an uploaded file exceeds the limit, the model may fail to load on the VR headset. Participants using Viewer mode on mobile devices may also not be able to view the model.

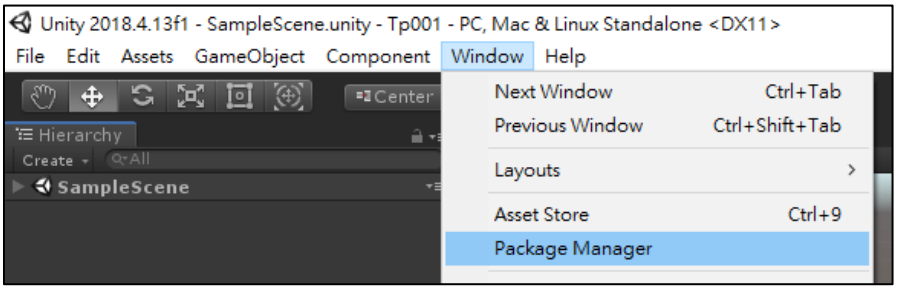
	PC VR	**All-in-one VR and Mobile**
Polygons	200,000 or below recommended	50,000 or below recommended, 200,000 maximum
File size	150 MB or below recommended	60 MB or below recommended, 300 MB maximum
Texture resolution	4096 x 4096 or below recommended	1024 x 1024 recommended, 2048 x 2048 maximum

Unity Asset Bundle Preparation and Export Guide for Sync

Step 1: Launch Unity

***Note:** Currently, Sync specifically supports Unity 2018.3 and Unity 2018.4. Over time, we will expand to later versions.

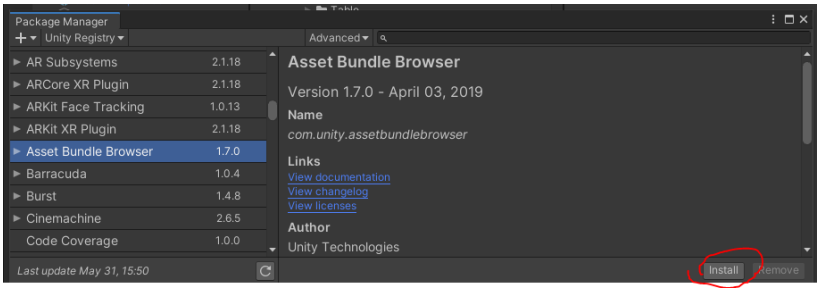
1. Open Unity.
2. Go to Window>Package Manger.



***Note:** If **Package Manager** is not listed, try using the supported versions of Unity mentioned above.

Step 2: Install Asset Bundle Browser

Let **Package Manager** load the full list. Scroll down and find **Asset Bundle Browser** and install it.

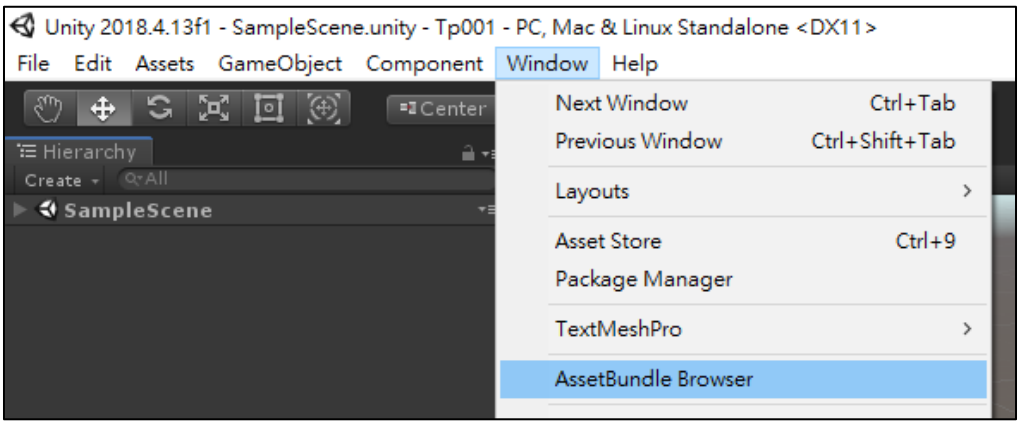


***Note:** **Package Manager** can be accessed in the recommended versions of Unity that Sync supports.

Step 3: Open Asset Bundle Browser

Under **Window**, you will see the **AssetBundle Browser** listed.

Click **AssetBundle Browser** to open it.



Step 4: Configure – Drag & Drop

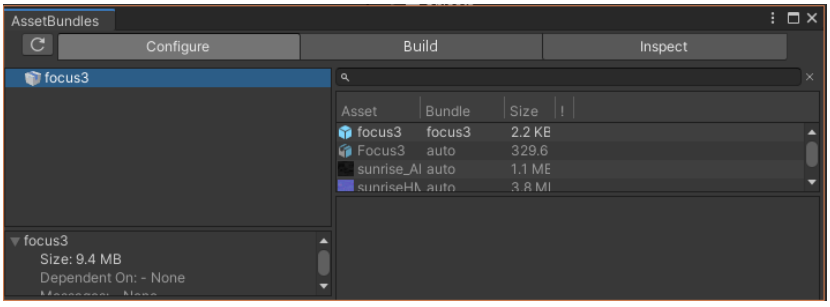
Grab your prefab and drag and drop it to the **Configure** tab under the **AssetBundle Browser**. It will automatically list all the assets included in the prefab.

Important notes regarding prefabs:

- Make sure your prefab name contains only lowercase letters and nothing else.

  ***Note:** Having uppercase letters, dashes, underscores, and symbols can create problems for asset bundles.

- See Recommendations and Limitations for details on texture resolution.

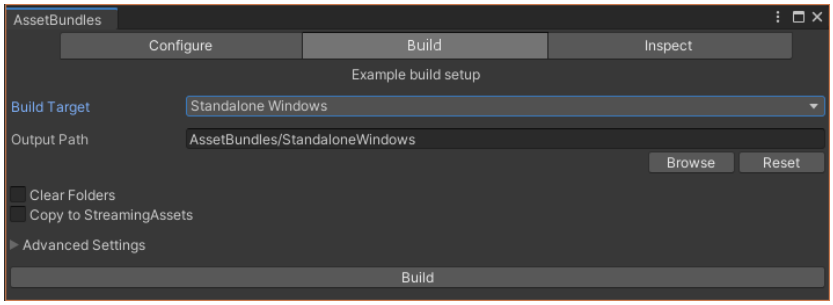


Step 5: Build the 3D model for PCs, Android, and iOS

To ensure all participants can view your 3D model, it is recommended to build the model for all platforms (PC, Android, and iOS) to accommodate all devices.

To build the 3D model for PCs:

1. Switch to the **Build** tab.
2. Set your build target to the following: **Build Target>Standalone Windows** (for PC VR).
3. Set your **Output Path**, and then click **Build**.



Note: See Recommendations and Limitations for details on file size requirements. If the output file size exceeds the limit, please go back to the Asset Bundle editor. Reduce the number of objects or polygons, or lower the resolution of the texture(s).

To build the 3D model for Android and iOS devices:

Follow the same steps above, except set your build target to the following:

- **Build Target>Android** (for All-in-one VR and Viewer mode on Android devices).
- **Build Target>iOS** (for Viewer mode on iOS devices)

Step 6: Rename the 3D model for PCs, Android, and iOS

To rename the 3D model for PCs:

1. Go to your Output Folder. Look for your prefab name. (The output file is typically the largest file in the Output Folder.)
2. Copy this file into a new folder and rename the file by appending '_windows.ab' to its name.

Important:

Do not change the filename! The output filename cannot (should not) be renamed, otherwise it won't work. Just add '_windows.ab' to the name of the file.

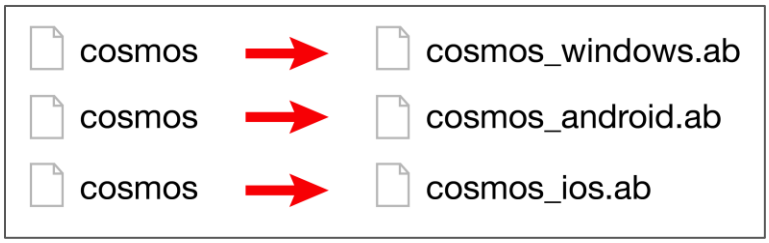
To rename the 3D model for Android devices:

1. Go to your Output Folder.
2. Look for your prefab name.
3. Copy this file into the new folder you created and add, '_android.ab' to its name. Do not change the name of the file.

To rename the 3D model for iOS devices:

1. Go to your Output Folder.
2. Look for your prefab name.
3. Copy this file into the new folder you created and add, '_ios.ab' to its name. Do not change the name of the file.

Filename examples:

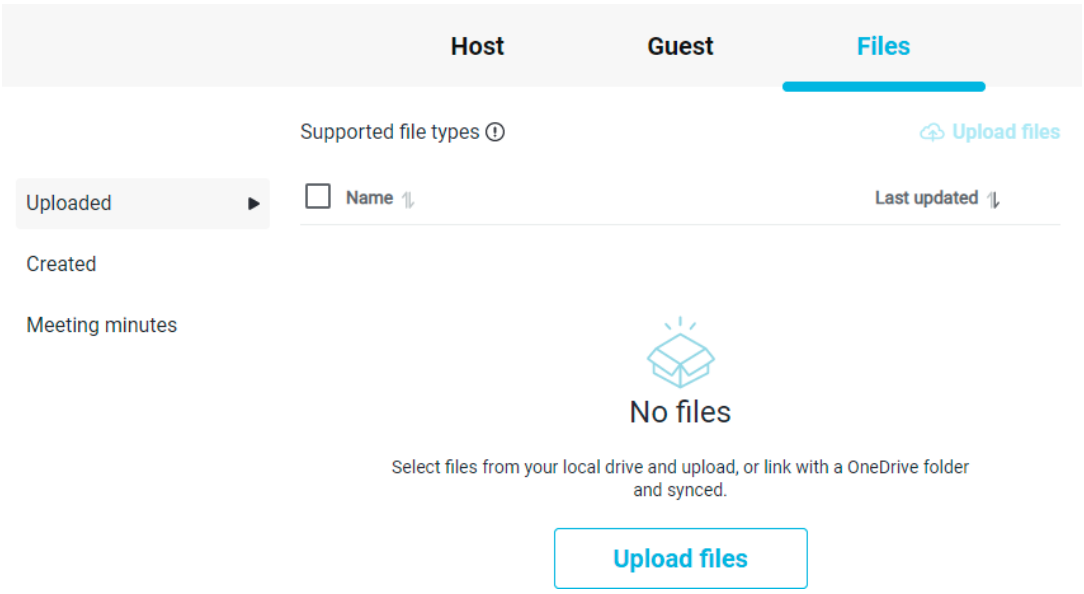


Step 7: Upload to the meeting room from OneDrive or your PC

Go to the Sync website at https://sync.vive.com and upload all files to a meeting room by syncing the files from OneDrive or uploading them from your PC.

To upload the 3D model:

1. On the Sync website, open the meeting room page.



2. Select **Upload files** to upload the prepared file.

   You can choose to sync with your linked OneDrive folder or upload from your local drive. After the upload is completed, you can then load the 3D model in your Sync meeting room.

Important: When you load your 3D model in Sync, it is recommended to load all three versions ('*_windows.ab', '*_android.ab', and '*_ios.ab') in order for users of PC VR, VIVE Focus series, as well as Android and iOS mobile devices (Viewer mode) to see your model.

See Uploading for more details on uploading 3D models.

Exporting 3D Models from 3D Software

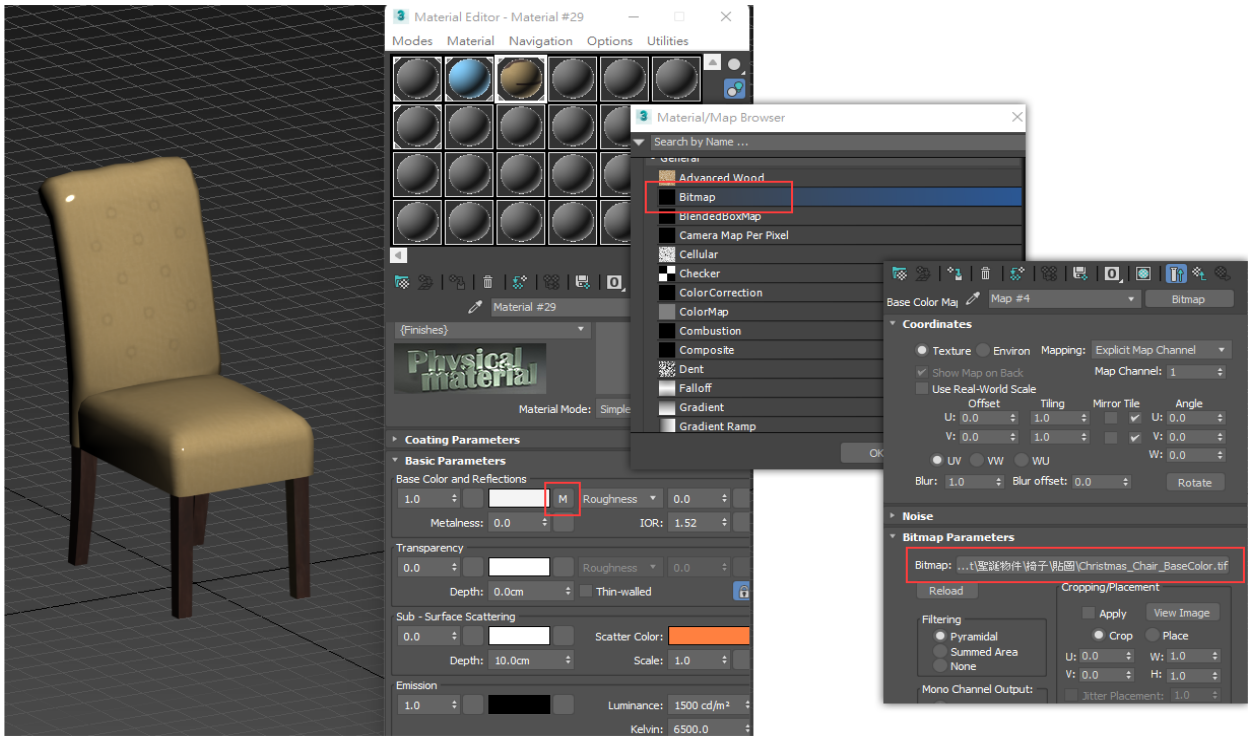
All models should follow the basic concepts of best practices. Specifically, please, perform a quality check of the method of construction by verifying that your model's geometry is 'clean' (this applies to both FBX and OBJ files used in the 3D software applications). Make sure to perform a cleanup process on the model and remove the following:

a. 0 area faces
b. 0 length edges
c. Non-manifold geometry

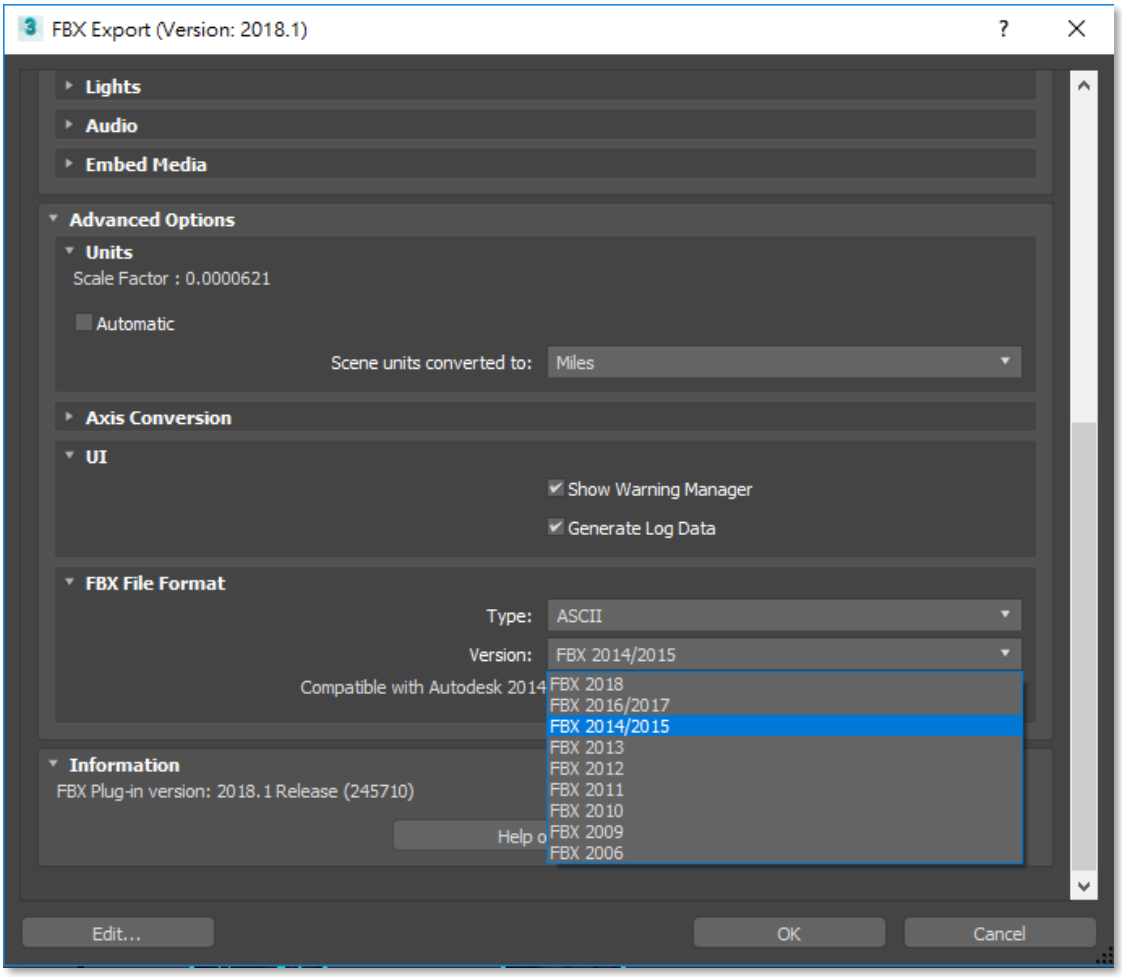
Note: When packaged as a ZIP file, Alpha map is not supported and only BaseColor map is supported.

3DsMAX Preprocess

1. Import your 3D model.
2. Check all texture mapping settings per material.



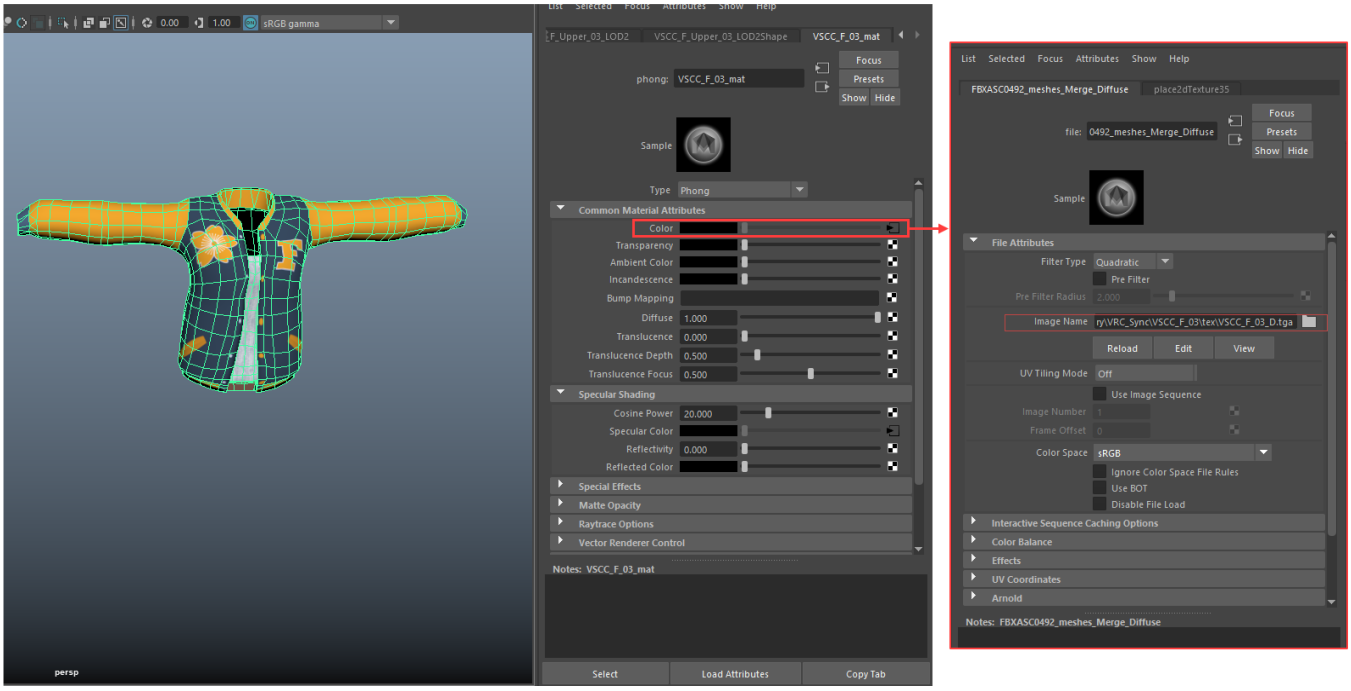
3. Export your 3D model. (You can use FBX plugins 2015 or a higher version.)



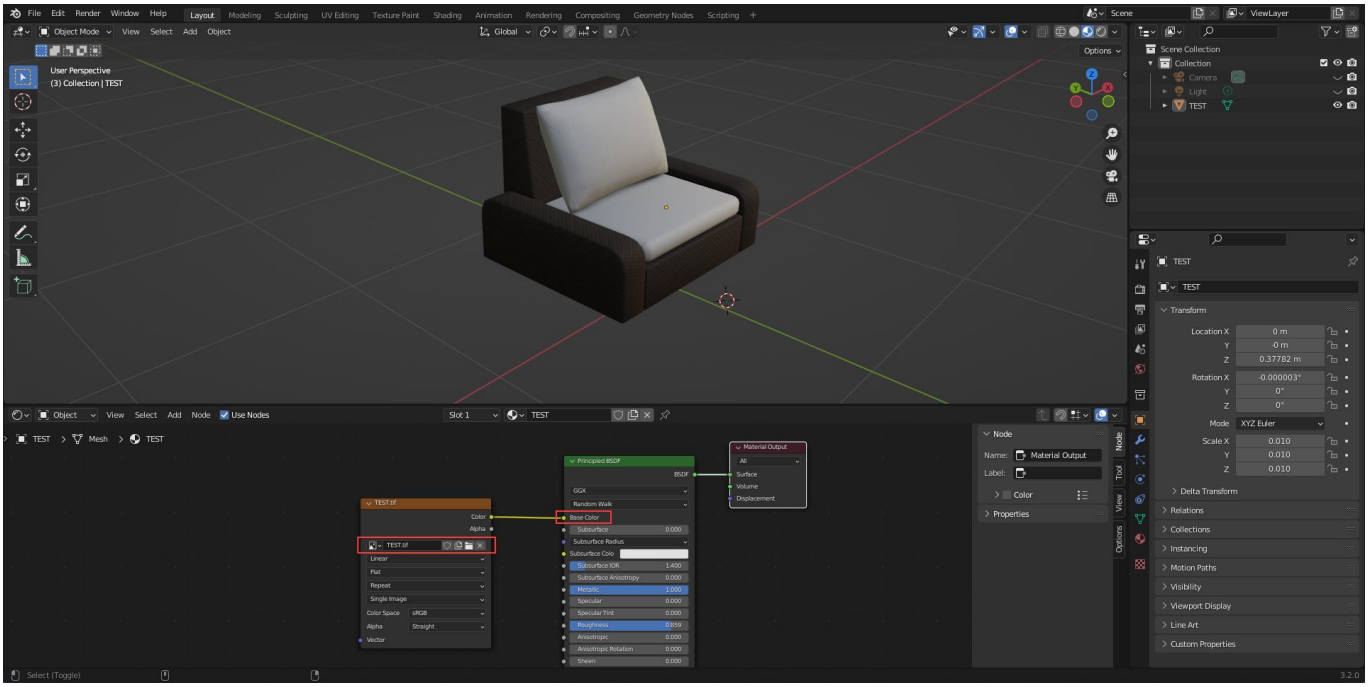
MAYA Preprocess

***Note:** Currently, 3D models exported from Maya as OBJ format are not supported. Only the FBX format is supported.

1. Import your 3D model and check textures mapping settings per material.



2. Export your 3D model.



1. Import your 3D model.
2. Check all texture mapping settings per material.

3. Export your 3D model.

Uploading

Follow the steps below to upload your 3D model.

1. Keep all texture names the same as what were used in the 3D software that created (exported) the 3D model. Don't change texture names after the export process.
2. Unity asset bundle (.ab) files do not need to be packaged into a ZIP file.

   FBX, OBJ (including mtl file), and glTF (.gltf / .glb) files must be packaged into their respective ZIP files before uploading.

   If you have separate texture files, package them and your 3D model in the same ZIP file.

Note: Using folders for textures and packaging folders in the ZIP file is not recommended. (To avoid upload problems, package a ZIP file that contains one 3D model file and its associated textures without folders.)

3. Go to the Sync website (https://sync.vive.com). Upload the .ab or .zip file from your OneDrive or upload the file directly from your PC.

   Note: Before uploading, make sure the size of your file (.ab or .zip) does not exceed the limit. See Recommendations and Limitations for details.

Loading the 3D Model in VIVE Sync

Follow the steps below to load your 3D model in VIVE Sync.

1. Open the Sync Menu by pressing the Sync button.
2. Point the controller beam toward the right side of the Sync Menu. Select **File** to open the File Browser.
3. Select the 3D model you want to open.