About The FBX Exporter Package

Version: 1.1.0b1

The FBX Exporter package provides a round trip workflow for editing geometry assets. Use this workflow to send geometry from Unity to Maya or 3ds Max, and back again, with minimal effort.

The FBX Exporter package includes the following features:
- **FBX Exporter:** Exports geometry as FBX files.
- **Convert To Linked Prefab Instance:** Converts a GameObject hierarchy to a Linked Prefab: a Prefab configured for auto-updating that is linked to a FBX Model.
- **FBX Prefab Component:** to handle non-destructively merging changes back into your Prefab whenever the FBX Model changes on disk.
- **Unity Integration for Maya:** Import and export assets between Unity and Maya with minimal effort.
- **Unity Integration for 3ds Max:** Import and export assets between Unity and 3ds Max with minimal effort

Requirements

The FBX Exporter package is compatible with the following versions of the Unity Editor:
- 2017.1 and later (recommended)

The Unity Integration for Maya feature supports the following versions of Maya:
- Maya 2017
- Maya 2018

The Unity Integration for 3ds Max feature supports the following versions of 3ds Max:
- 3ds Max 2017
- 3ds Max 2018

Exporting FBX files

Use Export Model (menu: **GameObject** > **Export Model...**) to manually export multiple GameObject hierarchies to an FBX Model file. All selected objects are exported to a single fbx file. The following rules apply:
- Parents of selected objects are not exported.
- Siblings of selected objects are not exported.
- Descendants of selected objects are exported.

- If both a parent and a descendant are selected, only the parent is exported.

The following objects are exported from Unity:
- GameObject hierarchies and their transforms
- Meshes, SkinnedMeshRenderer are exported as a static mesh. Multiple copies of the same mesh are exported as instances. The following mesh attributes are also exported:
  - Normals
  - Binormals
  - Tangents
  - Vertex Colors
  - All 4 Mesh UVs, if present
  - Quads or Triangles
- Materials are exported as Phong or Lambert. Phong if the material has specular, and Lambert in all other cases.
- Textures

Specifying the Model File name

The default filename is the name of the top-level, selected object. If multiple objects are selected, the last filename exported is used. If this is the first time objects are exported, the filename is set to Untitled.fbx.
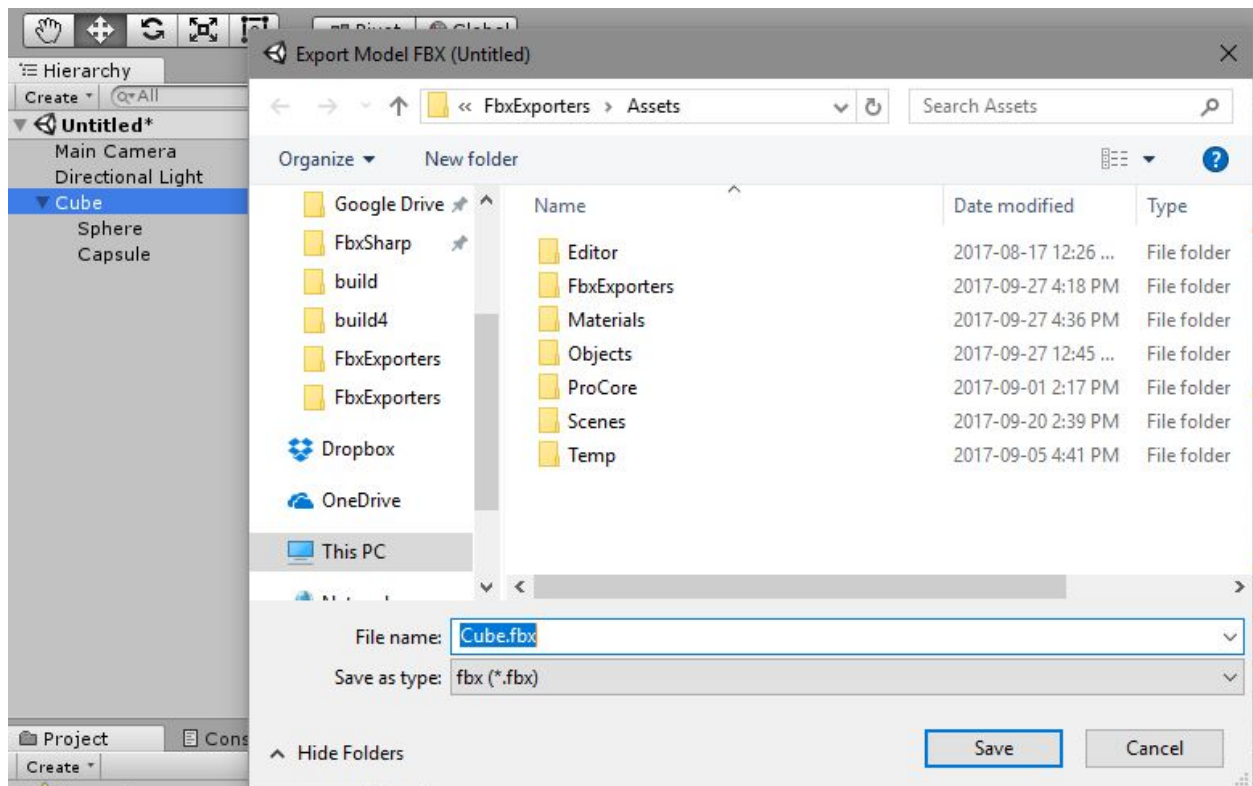
Exporting with relevant system units

The FBX Exporter exports in cm units, with mesh set to real world (meter) scale. For example, if vertex[0] is at [1, 1, 1] meters, it is converted to [100, 100, 100] cm.

There are no specific import options to adjust between Unity and Maya. When working in Maya, it may be convenient to set the working units to meters.

In 3ds Max it is recommended to set the system units to centimeters to avoid any scaling on model import and export.

NOTE: it can be helpful when working in Maya with large models to scale the near and far clipping plane of the cameras by 100x so that they clip to meters. You may also need to scale any lights you have in the Maya scene by 100x so that you can see their object display in the viewport.

Exporting with a relevant transform

When the FBX Exporter exports a single GameObject hierarchy, the transform is reset so that it appears at the world centre in Maya and 3ds Max. It is assumed that the transform's identity is its initial state.

Important: If you create a Model with factory primitive, such as a Cube or Sphere, transform changes on the root are not exported to the FBX file. To keep these transform changes, either place these primitives under a root GameObject or use a modelling package, such as ProBuilder.

Convert To Linked Prefab

The FBX Exporter package supports a minimal workflow for converting a GameObject hierarchy into a Linked Prefab. A Linked Prefab is automatically updated whenever the FBX files change on disk.

Use Convert To Linked Prefab (menu: **GameObject** > **Convert To Linked Prefab Instance**) to replace the GameObject hierarchy with an instance of a Prefab that is linked to an FBX Model. The Linked Prefab contains a FbxPrefab script component that merges FBX Model changes into the Linked Prefab.

Convert To Linked Prefab exports each selected GameObject hierarchy as a .prefab and a .fbx file. The following rules apply:
- Parents of selected objects are not exported.

- Siblings of selected objects are not exported.
- Descendants of selected objects are exported.
- If both a parent and a descendant are selected, only the parent is exported.

Automatic updates

Whenever an FBX file is changed on disk and the FBX file resides within the Asset folder of the Unity project, the built-in FBX Importer runs and updates the geometry. A Linked Prefab merges the following additional changes:
- Adding or removing objects in the hierarchy
- Changing the parent of objects in the hierarchy
- Adding or removing the mesh component for an object
- Changing the transform of the children in the hierarchy

NOTE: If a merge conflict occurs between a changed FBX file and a Linked Prefab, the FBX file takes precedence.

KNOWN ISSUES:
- If the converted hierarchy contains a MeshCollider and you replace the mesh in the FBX file, the reference to the new mesh is not updated in the MeshCollider. To resolve this issue, you must manually update the Linked Prefab so that the MeshCollider references the new mesh.
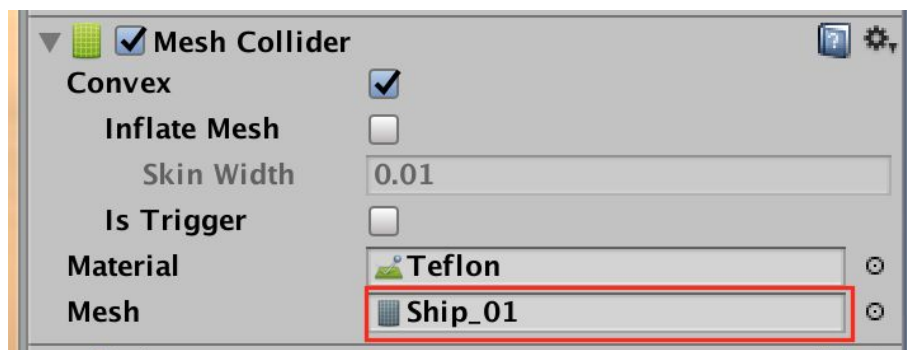
Fbx Export Settings

Use the Fbx Export Settings to change how the Fbx Exporter exports FBX Models and to install the Unity Integration for Maya or 3ds Max.

Property:	Function:
Convert to Maya Compatible Naming	Controls the renaming of the GameObject and Materials on export. The FBX Exporter ensures compatible naming with Maya to avoid unexpected name changes between Unity and Maya. During export the FBX Exporter replaces characters in Unity names as follows: • Replaces invalid characters with underscores ("_"). Invalid characters are all non-alphanumeric characters, except for colon (":"). • Adds an underscore ("_") to names that begin with a number. • Replaces diacritics. For example, replaces "é" with "e". For FBX Model filenames, the FBX Exporter ensures that names do not contain invalid characters for the file system; the set of invalid characters may differ between file systems. NOTE: If you have a Material with space in its name, the space is replaced with an underscore ("_"). This results in a new Material being created when it is imported. For example, the Material named "Default Material" is exported as "Default_Material" and is created as a new Material when it is imported. If you want the exported Material to match an existing Material in the scene, you must manually rename the Material before exporting.

Center Objects	Controls whether objects that are centered around a shared root keep their relative placement unchanged, or keep their global transforms from the scene.
Export Path	Specifies the location where converted GameObject hierarchies are saved as Linked Prefabs. Both .fbx and .prefab files are saved to this location.
3D Application	Selects the 3D application to integrate with Unity. Select "Browse" to choose a 3D applicationinstalled in a non-standard location. Maya 2017+ and 3ds Max 2017+ are the two applications currently supported.

Unity Integration for Maya and 3ds Max

The Unity Integration is designed as an effortless experience for exchanging assets between Unity and either Maya or 3ds Max.

Use the Unity Integration to import and export models directly to and from Unity without having to specify filenames, select objects, or set FBX importer or exporter settings.

To customize FBX Exporter settings in Maya, use the unityFbxExportSettings.mel file, located in the Integrations/Autodesk/maya/scripts folder. For 3ds Max use the unityFbxExportSettings.ms file located in the Integrations/Autodesk/max/scripts folder.

Installing the Integration for Maya or 3ds Max

To install Unity Integration for Maya or 3ds Max, open the Fbx Export Settings (menu: **Edit** > **Project Settings** > **Fbx Export**)
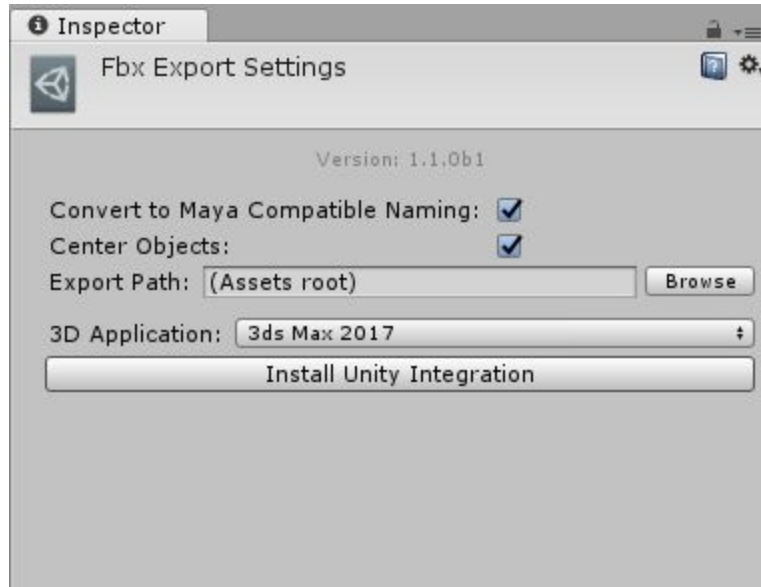
Use the 3DApplication property to choose the 3D application and version where the Unity Integration is to be installed. The 3D Application property lists the value set for the MAYA_LOCATION environment variable when the FBX Exporter Package was first installed.

To select a version of Maya or 3ds Max installed outside the default location, choose Browse.
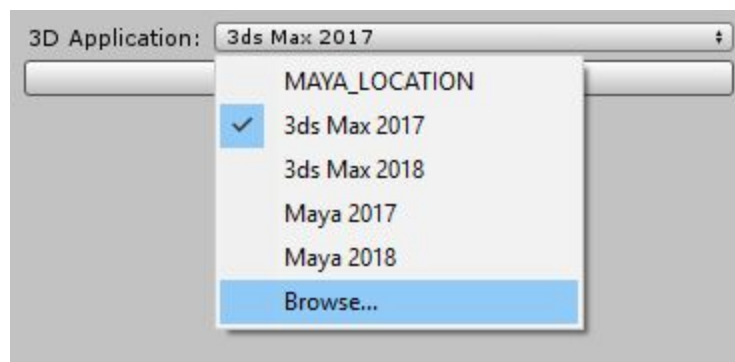
NOTE: Before clicking Install Unity Integration, close all instances the 3D applicaiton that matches the version specified by 3D Application.

NOTE: If you are setting the MAYA_LOCATION environment variable on **macOS**, set the path to the Contents folder. For example, set the path to /Applications/Autodesk/maya2017/Maya.app/Contents for Maya 2017.

Click **Install Unity Integration** to install the Unity Integration for the selected 3D application. The Unity Integration comes packaged in several zip folders (one zip per supported application).

You will first be prompted to select a folder to unzip the Unity Integration to. This folder can be unzipped outside of your current project. Then the application will start, configure the plugin, and automatically exit. Unity reports whether the installation was a success.
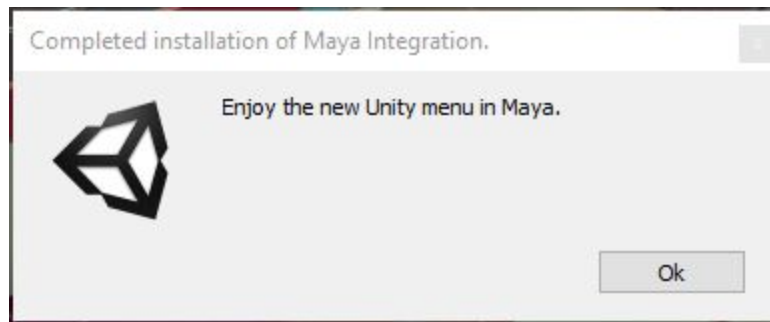
NOTE: if an error occurs during startup, Maya may not close. It this happens, check the Maya console to see if you can resolve the issue, and then manually close Maya.

Command line installation (macOS)

You can install the Unity Integration for Maya directly from the command-line. The FBX Exporter package contains an install_maya_plugin.sh script for **macOS**.

Importing a Model from Unity

Importing a FBX model automatically configures the plugin for export. The plugin remembers your Unity Project, the export filename, and which objects to export.

Select Import to open a file browser directly in your current Unity Project. Use the file browser to select the Model to import.

In Maya the Import option can be found in **File > Unity > Import.**
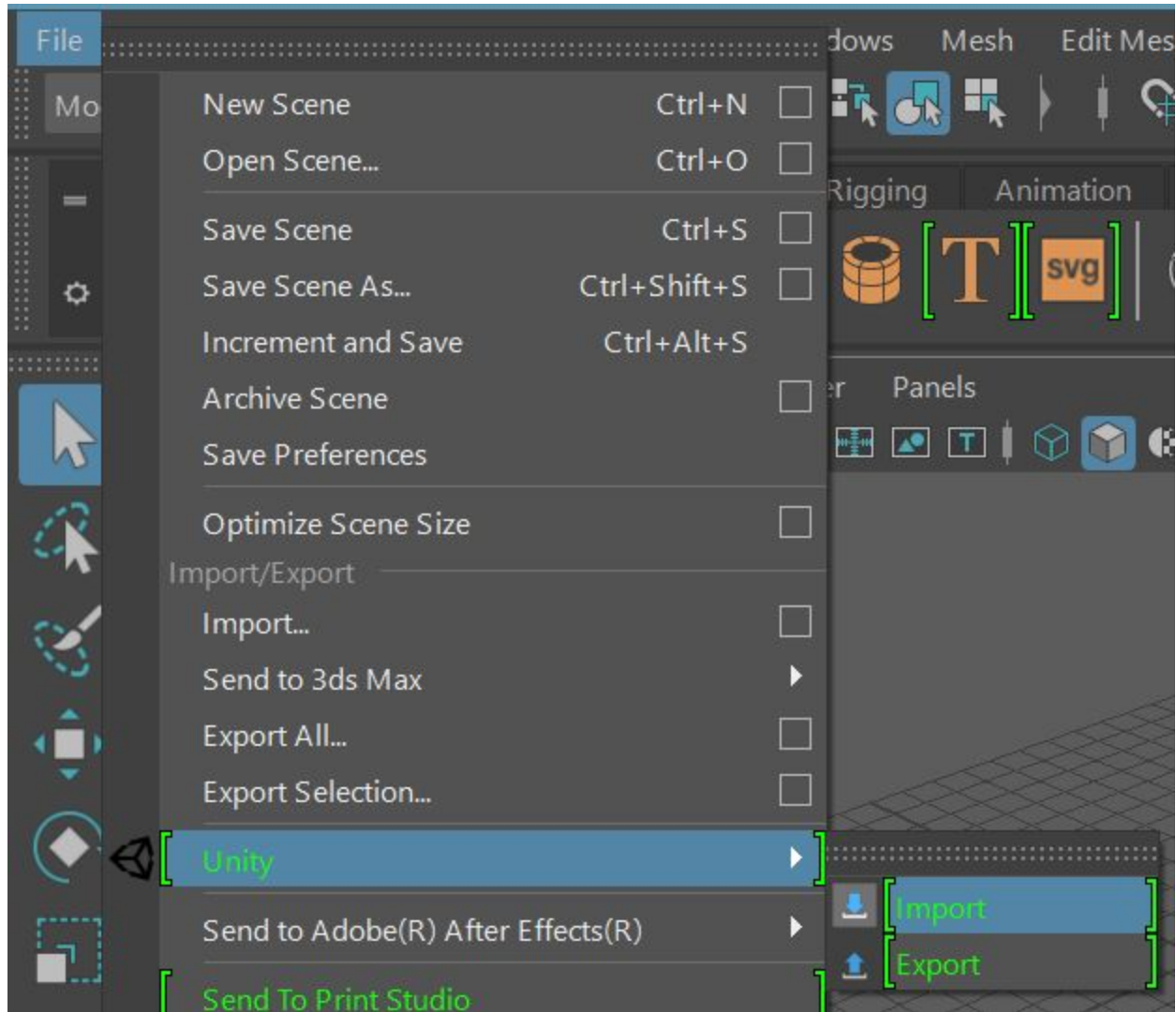
In 3ds Max 2018 the Import option can be found in **File > Import > Import from Unity.**
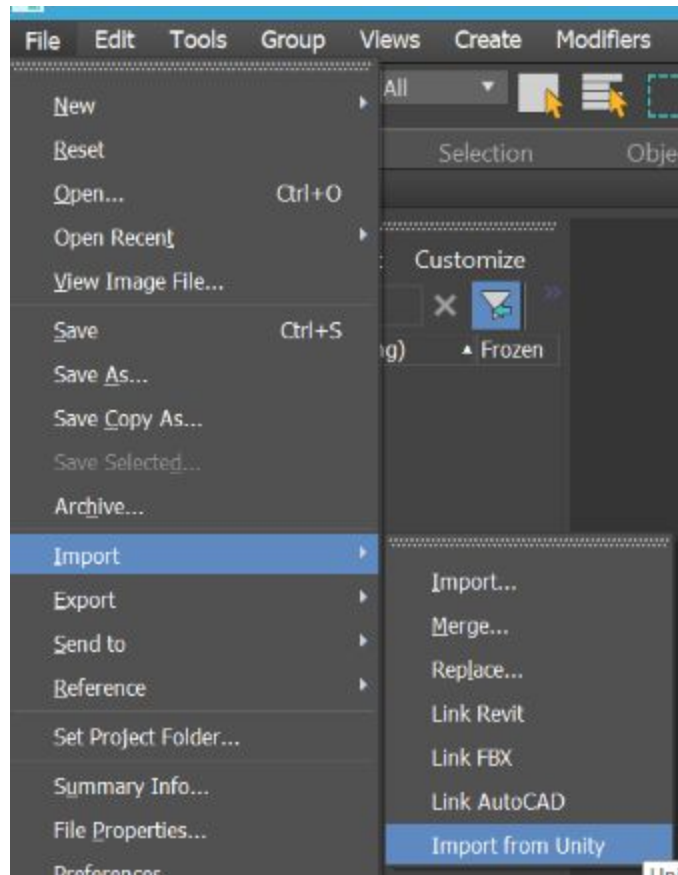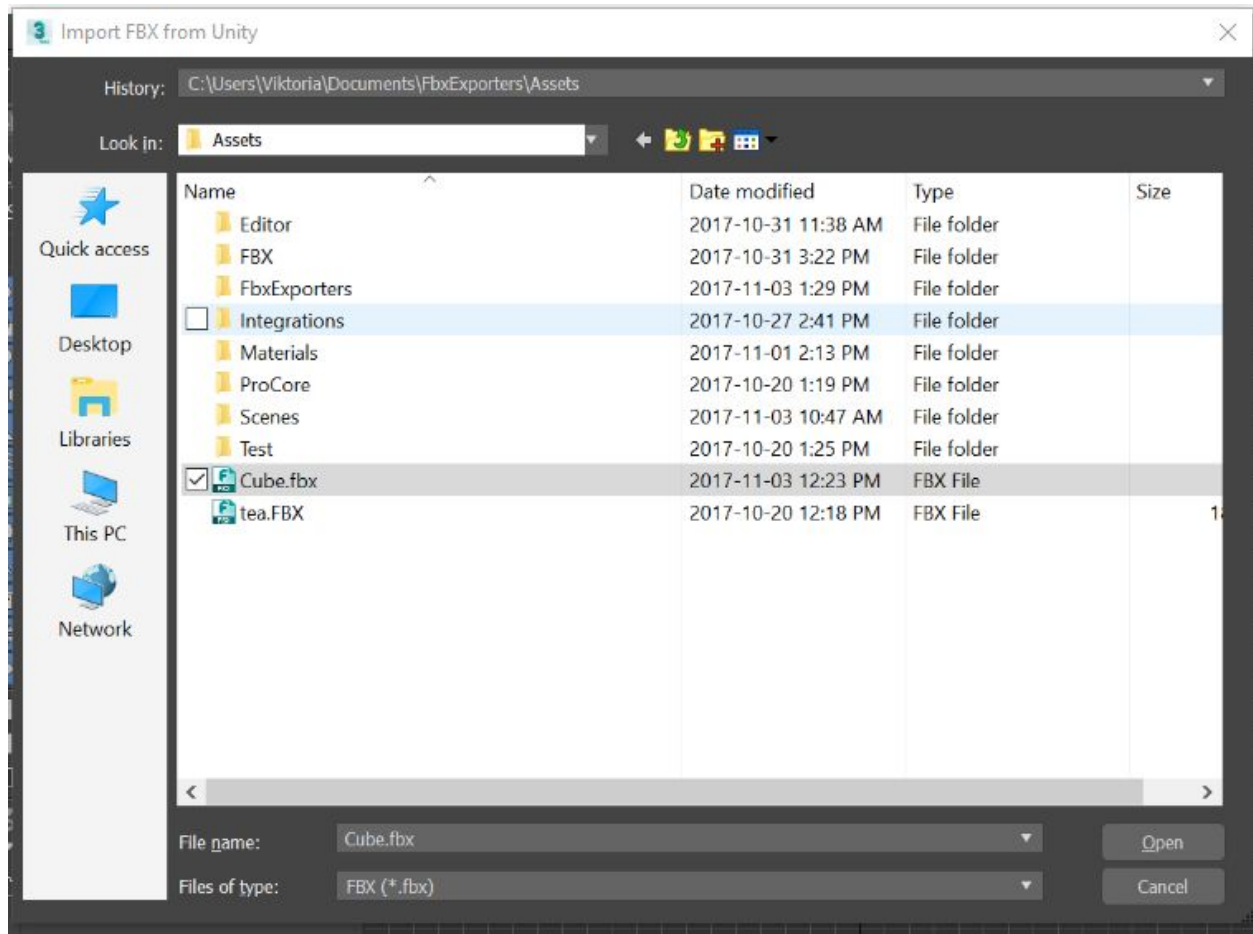
In 3ds Max 2017, the Import option can be found in the main menu bar in Unity > Import.
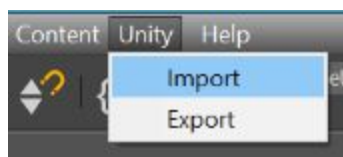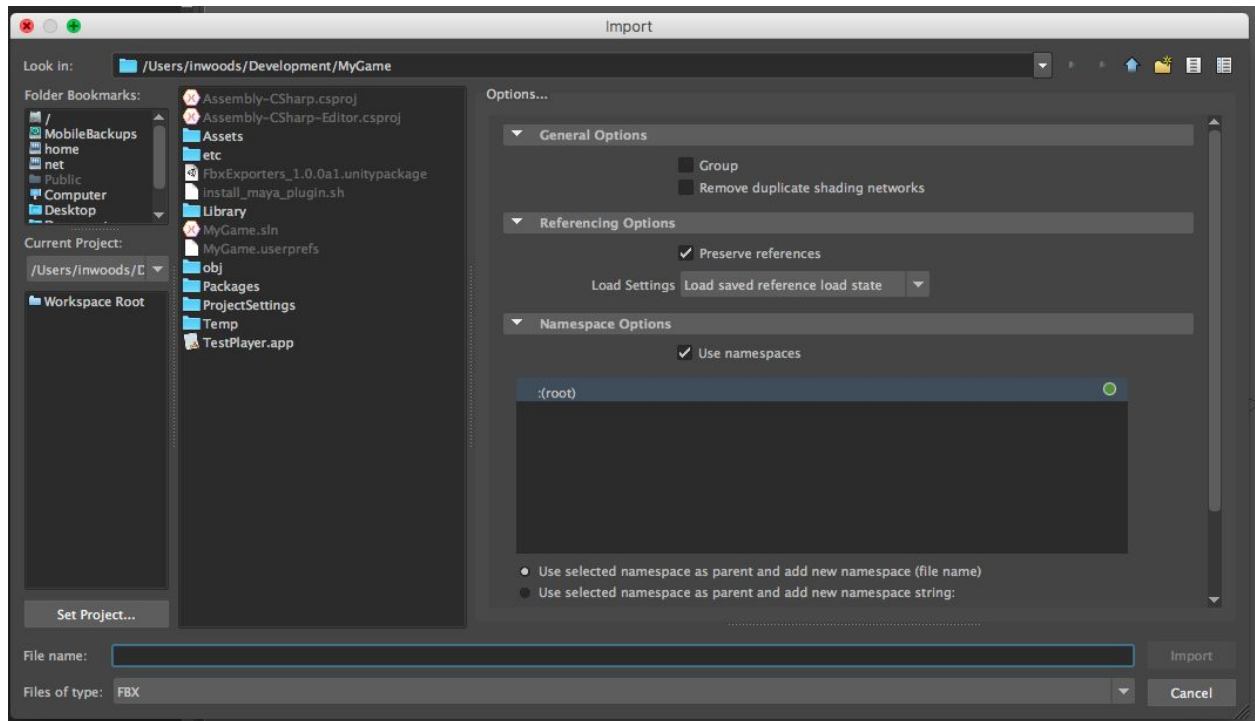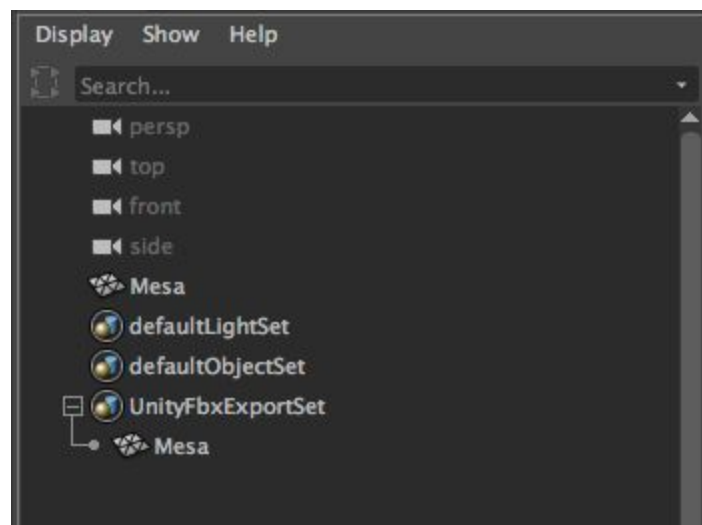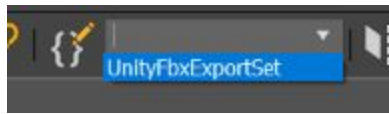
Maya FBX import menu

3ds Max FBX import menu

Unity import automatically creates a UnityFbxExportSet set with the imported objects. Unity export also uses this set to determine which objects to export. If you add a new object to the model, you must also add this new object to the UnityFbxExportSet set.
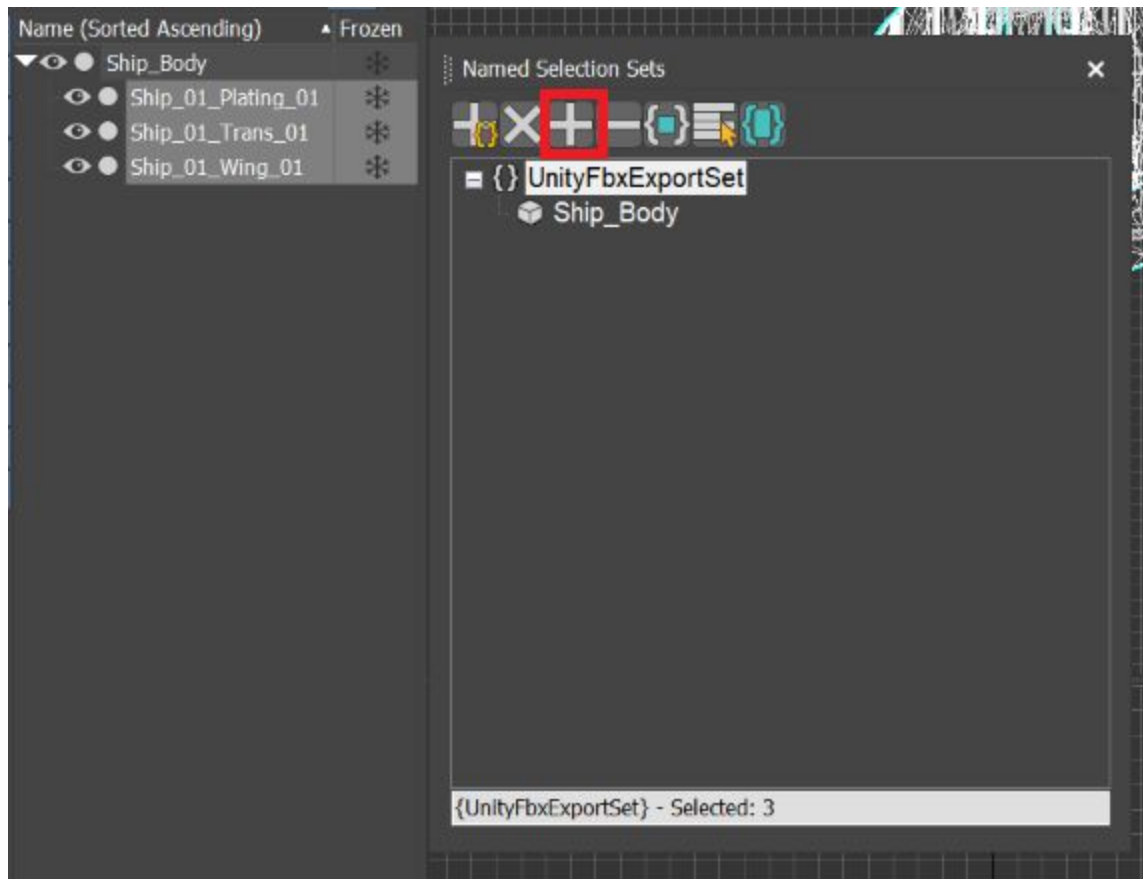
UnityFbxExportSet in Maya

UnitFbxExportSet in 3ds Max

In 3ds Max the UnityFbxExportSet can be edited by clicking the "Edit Named Selection Sets" tool . In order to add objects to the set, select the objects to add and click the "Add Selected Objects" button . In order to remove objects click the "Subtract Selected Objects" button . Alternatively, these options are also available by right clicking on the UnityFbxExportSet to open the context menu.


Adding objects to the UnityFbxExportSet in 3ds Max

NOTE: In Maya, for the duration of the Unity import, the Unity Project uses the current Maya workspace. This allows you to click on the "Workspace Root" in the "Current Project:" view and

the file browser will return to the Unity Project folder root. A side effect of making the Unity Project the current workspace is that Maya will also create a workspace.mel file in your Unity project, this file can be deleted safely.

NOTE: In 3ds Max if the system units are not set to centimeters, you will be prompted to change the system units to centimeters as this will ensure scaling is maintained on export. If "yes" is selected the system units will be changed to centimeters. If "no" is selected, the prompt will not be shown again for the remainder of the 3ds Max session or in the case of a .max file, will not be shown again for this file.
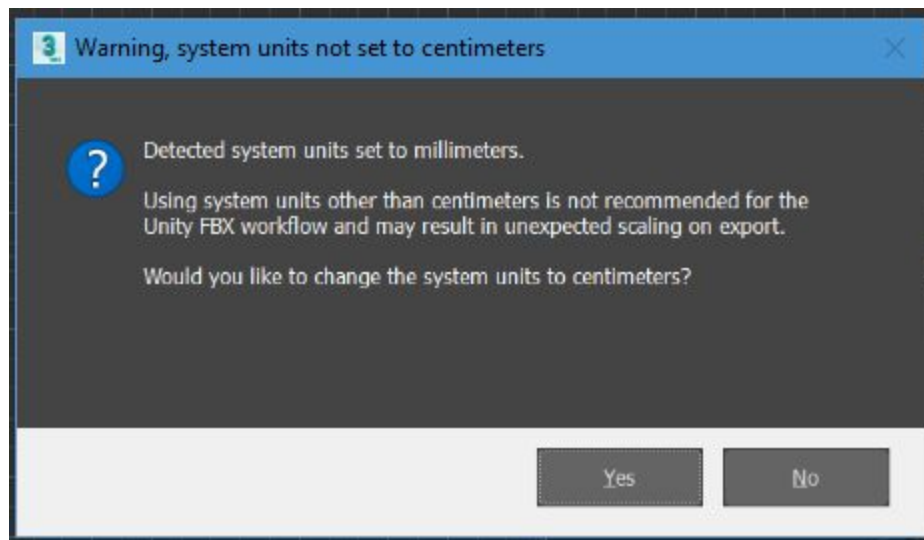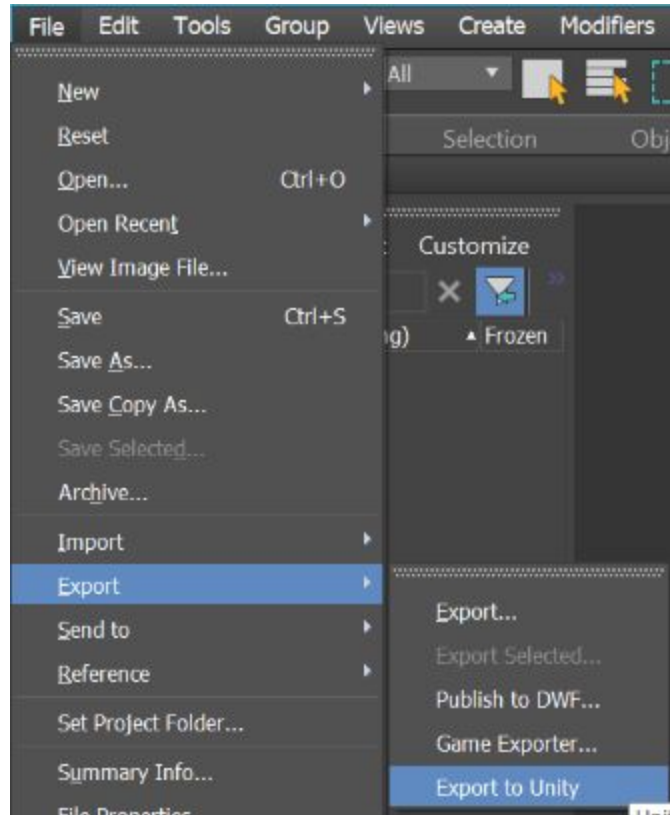

Exporting a Model to Unity

Select Export to automatically export with the settings and models configured during import. No additional steps are required.
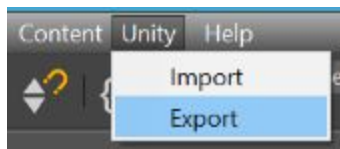
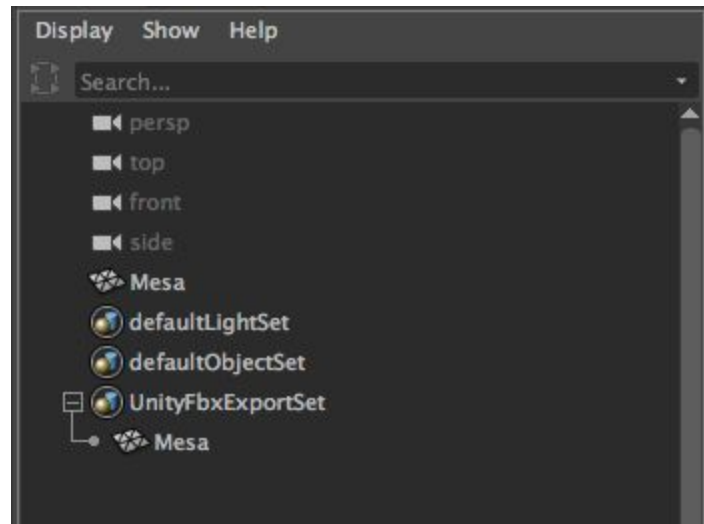In Maya the Export option can be found in **File > Unity > Export**
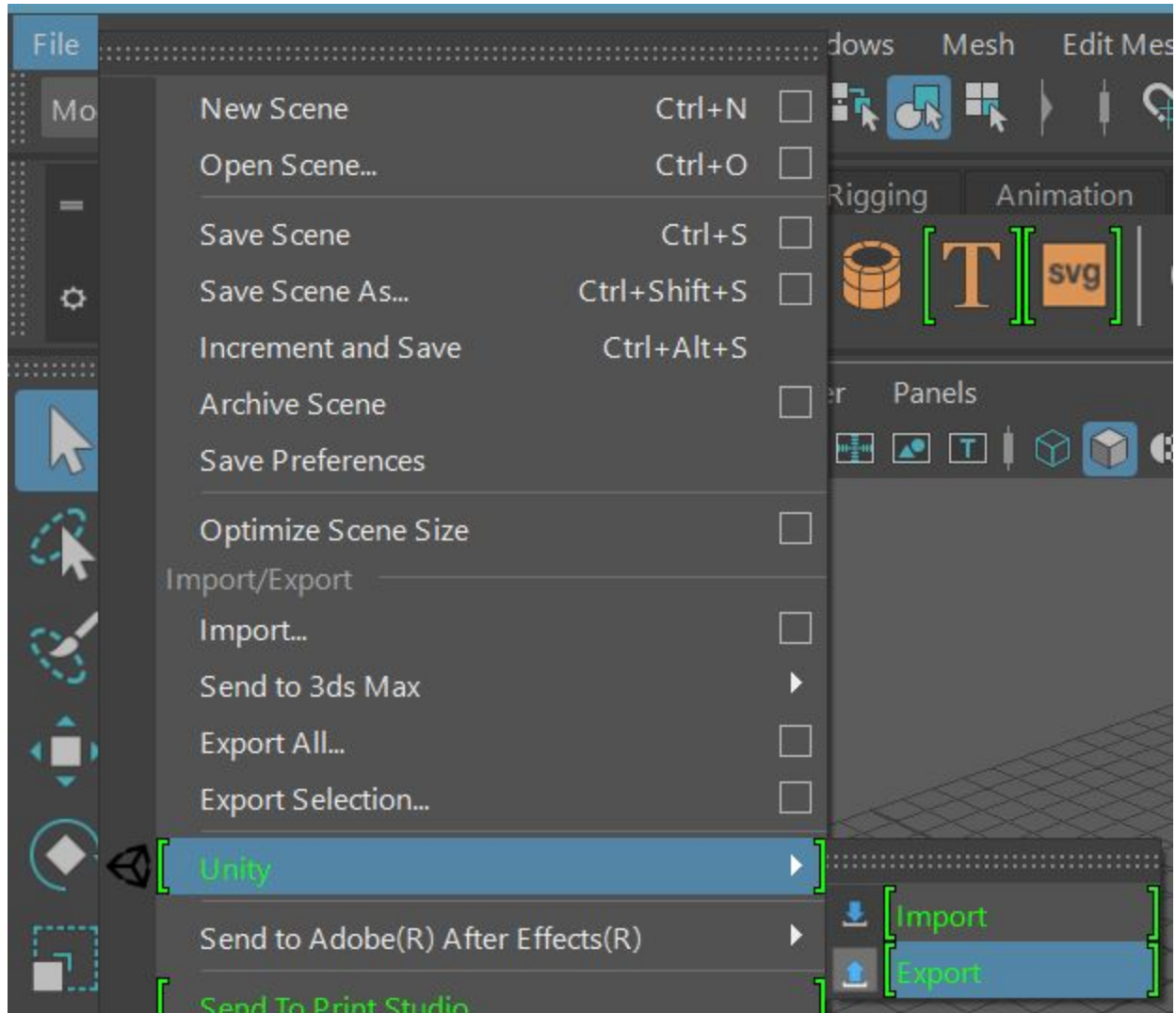
In 3ds Max 2018 the Export option can be found in **File > Export > Export to Unity.**

In 3ds Max 2017, the Export option can be found in the main menu bar in **Unity > Export.**

NOTE: If you add new objects to the model since the last import or export, add them to the UnityFbxExportSet set.

Selecting Export automatically exports the current Model back to Unity. When you switch back to the Unity application, your scene has already been updated.