

MB Sync Tool Documentation

2025-03-24

writing at the time the plugin version: 1.3.0

Real-time synchronization of motion data from Autodesk MotionBuilder
MBSyncTool plugin for real-time synchronization of motion data
from Autodesk MotionBuilder.

This document describes how to install and use "MBSyncTool".

The path and directory should be changed to match your environment.

When upgrading from MBSyncTool v1.2, please delete the files related to MBSyncTool v1.2
(MBSyncTool folder) before reinstalling v1.3.

1. Overview

MBSyncTool is a plugin that synchronizes the transformations of a characterized character and prop (node) from MotionBuilder.

Synchronization is made possible by two things: the Plugin on the MotionBuilder side and the assets on the receiver side.

2. Validated environment

Windows11 64bit

MotionBuilder 2025

MotionBuilder 2024

MotionBuilder 2023

MotionBuilder 2022

Unity 2022.3.56f1 (LTS)

(Operation not confirmed)

MotionBuilder 2020 (Deprecated)

MotionBuilder 2019 (Deprecated)

Be sure to close all firewalls and virus security software on your PC.

We have developed the software so that it works regardless of the version, but it will be relatively stable if you use the version that has been verified.

If you encounter problems such as synchronization not being possible with other versions, we may be able to deal with it once you contact us, but we cannot guarantee it.

Be sure to verify the operation with the TRIAL edition before purchasing the STANDARD edition.

Also, the versions of the MotionBuilder Plugin and Unity assets should be the same.
Use the same major version and minor version.

If the versions are different, motion data cannot be received.

Example : version 1.2.0

1: Major version

2: Minor version

0: Build number

MB : 1.2.0 -> Unity : 1.2.0 (OK)

MB : 1.2.0 -> Unity : 1.0.3 (NG)

MB : 1.2.0 -> Unity : 1.2.x (OK)

MB : 1.2.x -> Unity : 1.2.0 (OK)

3. TRIAL edition and STANDARD edition

TRIAL edition and STANDARD edition Currently divided into TRIAL edition and STANDARD edition. Please note that the TRIAL edition has a limit on the number of Characters and Props that can be synchronized.

If you have any questions, we would appreciate it if you could contact us.

Support is basically not possible, with the exception of those that can be dealt with immediately. If you need support, Please contact us.

a. TRIAL edition

1Character and 1Prop can be synchronized from MotionBuilder to Unity.

There are currently two versions of the game, the TRIAL edition and the STANDARD edition, please note that the TRIAL edition has a limit on the number of characters and props that can be synced.

If you have any questions, please feel free to contact us.

b. STANDARD edition

It is possible to synchronize an unlimited number of Characters and Props from MotionBuilder to Unity.

However, **50 characters and 50 props is the maximum number** of characters and props that can be functionally synchronized.

If you need more than 50 characters or 50 props to be synchronized, please contact us.

Also, if you wish to use the software with multiple MotionBuilders at the same time, such as for redundancy, please purchase a license for that number.

4.Installation and usage

a.DL tools

The procedure differs depending on whether you are downloading from Booth or UnityPackageManager.

a-1. Booth

Download zip file of the.

After the download is complete, unzip the zip.

The zip contains

_SampleData — Unity package of the sample scene, FBX sample motion data

MotionBuilder — MotionBuilder plugin installer

Unity — the assets on the Unity side

(Asset in Unity)

Editor - Editor extension for MBSyncToolReceiver, etc.

Plugin - The main body of the receiver's program

Prefabs - Prefab data for immediate setup of the receiver

The MotionBuilder-side plugins used in the following sections are included in **_SampleData** directory.

b.Install MotionBuilder side plugin

If MotionBuilder is already running, exit it.

If the MotionBuilder installation directory is not the default directory, the

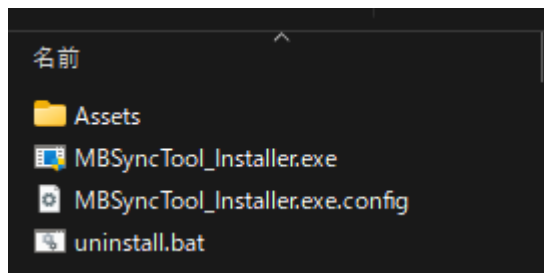
If the installation directory is not the default directory, the installer will not be able to install MotionBuilder.

Please install MotionBuilder using the method described in b-2 "Manual Installation".

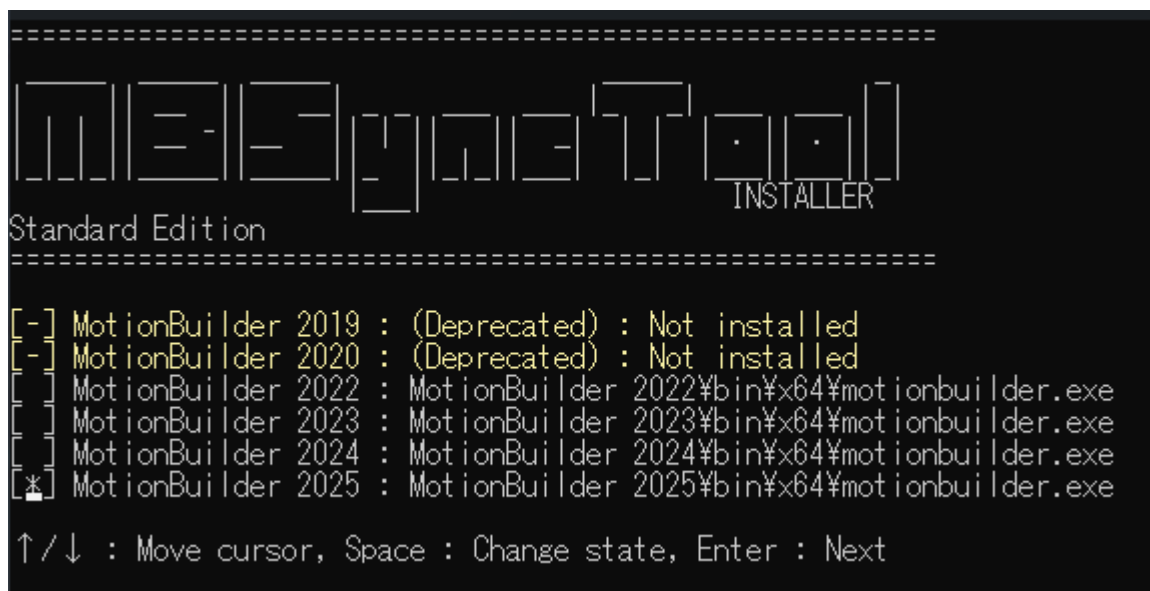
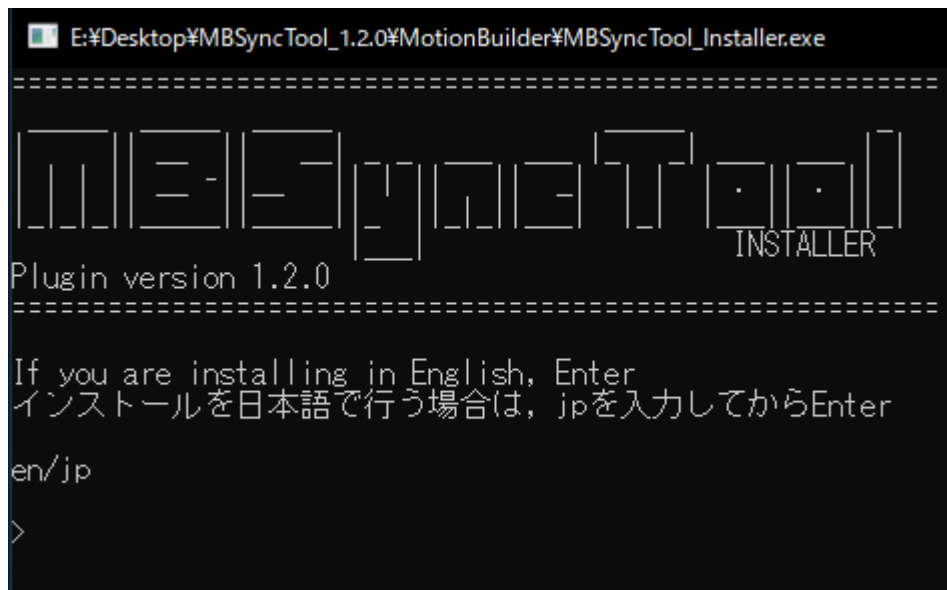
b-1.Use installer

If MotionBuilder is installed in the default installation directory
(under Program Files\Autodesk), use the installer.

If the installer does not work properly, please install it manually.



Run SyncTool Install.exe.



When MotionBuilder is found installed, the installation destination will be displayed.
You can use the cursor keys ↑↓ and the spacebar to select the installation location of MBSyncTool.

```

MotionBuilder 2023
MotionBuilder 2024
MotionBuilder 2025

Can I install the Plugin?(n)

yes/no

>y
Install : mbSyncTool_MB2022.dll
Install : mikinelTools_menuSetups.py
Copy directory : C:\Program Files\Autodesk\MotionBuilder 2022\bin\x64\plugins\mbSyncTool_img

Install : mbSyncTool_MB2023.dll
Install : mikinelTools_menuSetups.py
Copy directory : C:\Program Files\Autodesk\MotionBuilder 2023\bin\x64\plugins\mbSyncTool_img

Install : mbSyncTool_MB2024.dll
Install : mikinelTools_menuSetups.py
Copy directory : C:\Program Files\Autodesk\MotionBuilder 2024\bin\x64\plugins\mbSyncTool_img

Install : mbSyncTool_MB2025.dll
Install : mikinelTools_menuSetups.py
Copy directory : C:\Program Files\Autodesk\MotionBuilder 2025\bin\x64\plugins\mbSyncTool_img

Install is finished!

[Please any key ...]

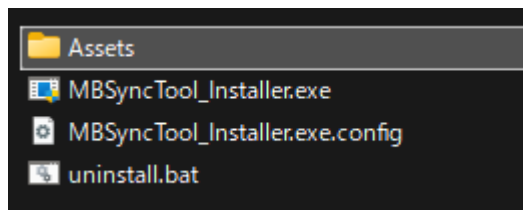
```

After the installation is complete, a list of file copy locations and other information will be displayed.

b-2.Manual installation

How to manually copy the files into MotionBuilder's Python startup folder and plugin folder
The following is how to copy the files manually.

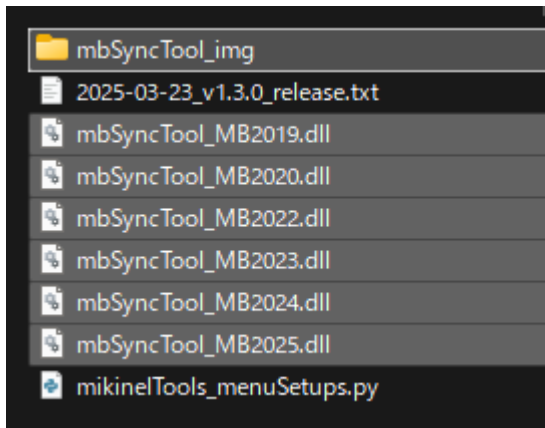
Navigate to the Assets folder included in the installer (Assets_trial for the TRIAL edition)
in the installer.



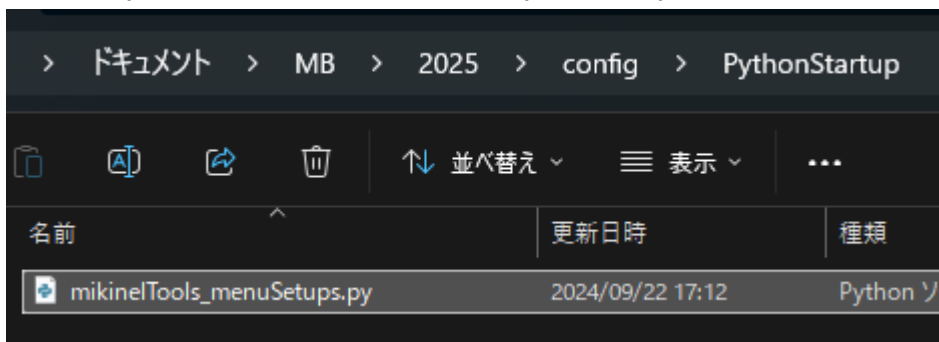
“mbSyncTool_img” folder and “mbSyncTool_MB20**.dll”

Copy the file into the plugin folder in the directory where the MotionBuilder executable is located.

(This is the plugin folder in the same directory as motionbuilder.exe. (This is the plugins folder in the same directory as motionbuilder.exe)

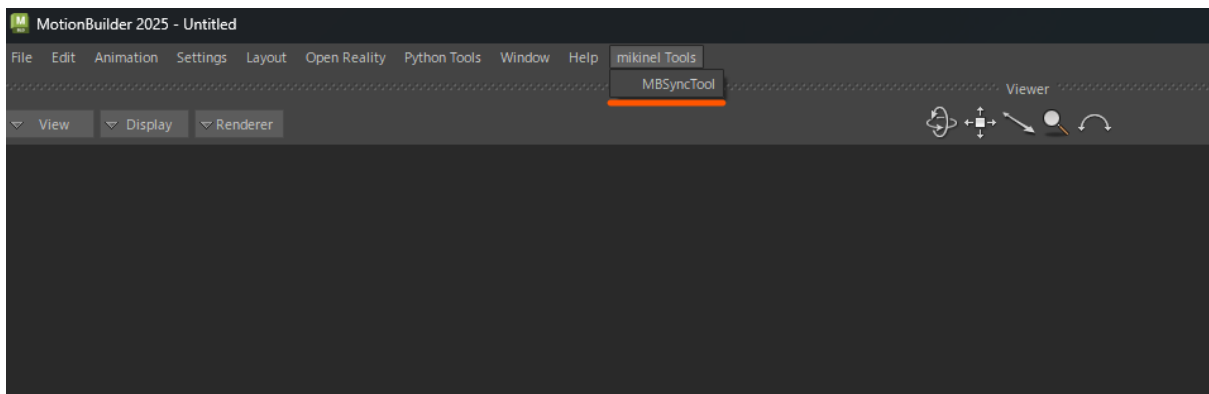


Next, copy “mikinelTools_menuSetups.py” to the Python startup folder.

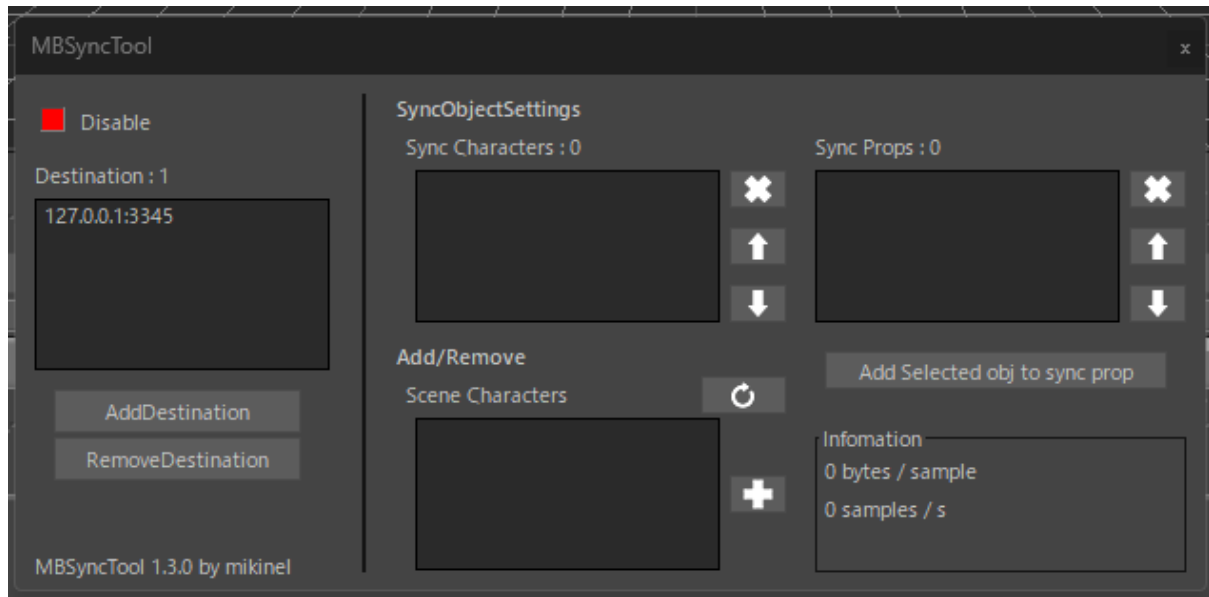


Start MotionBuilder.

Select MBSyncTool from the "mikinel Tools" menu at the top of the window and click



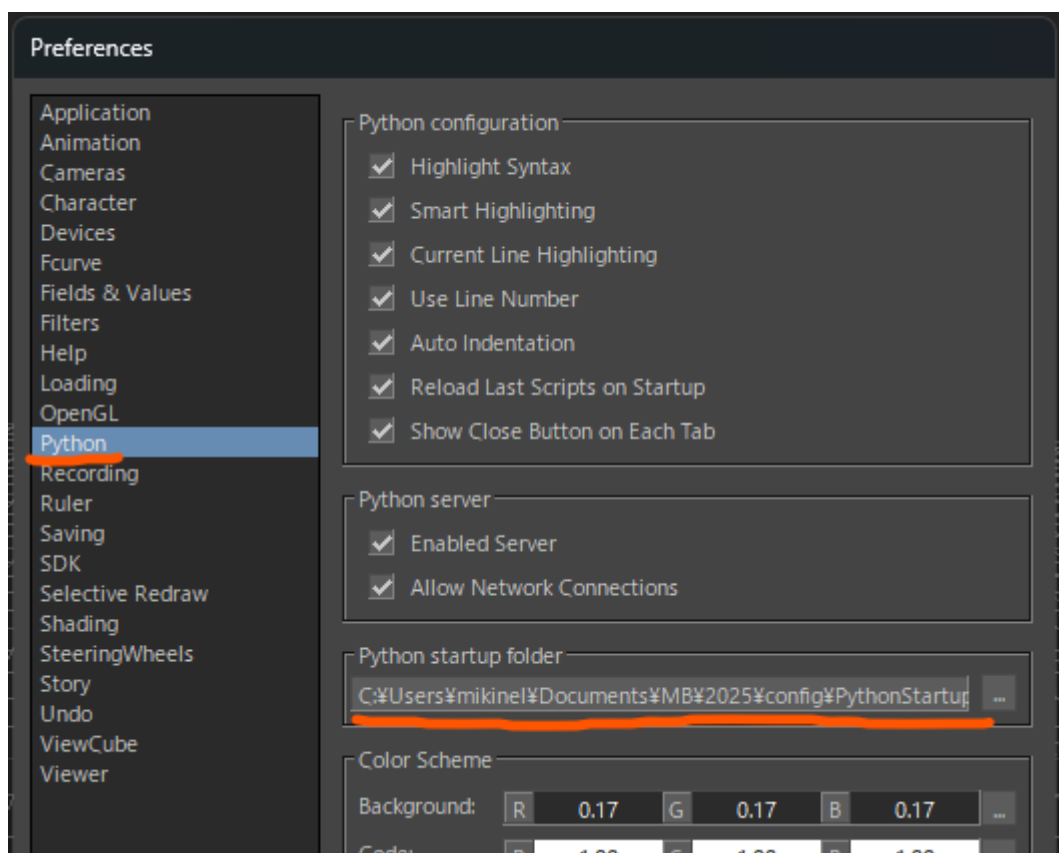
When the MBSyncTool window appears, the installation is complete.



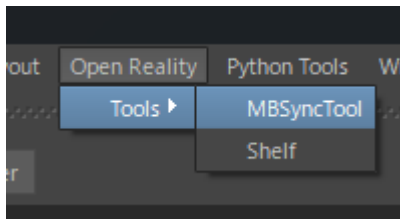
If you do not see "mikinel Tools" in the menu, check if the Python startup folder has been changed.

If you do not see "mikinel Tools" in the menu, make sure that the Python startup folder has not been changed.

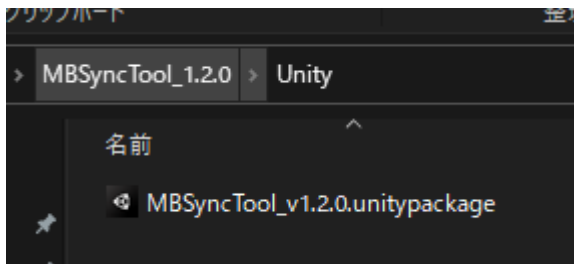
The default startup folder is the PythonStartup folder under Documents.



MBSyncTool can also be called from OpenReality's Tools.



c.Setup Unity assets

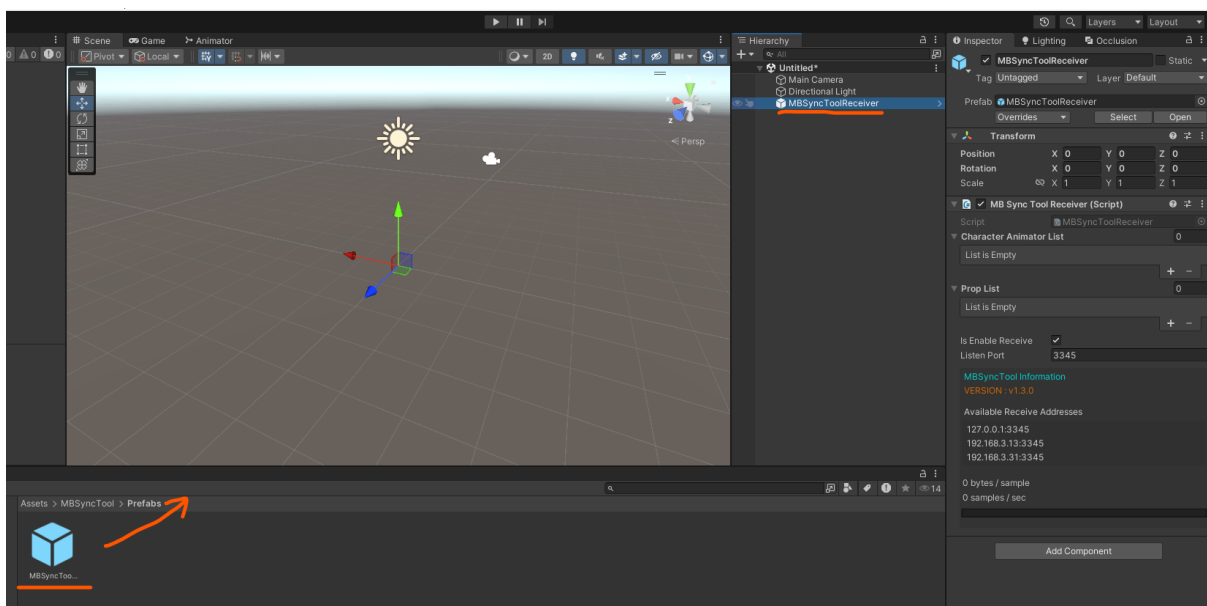


Included in the Zip

Unity\MBSyncTool_vx.x.x.unitypackage

included in the Zip. After importing, go to

Asset/MBSyncTool/Prefabs/Receiver.prefab

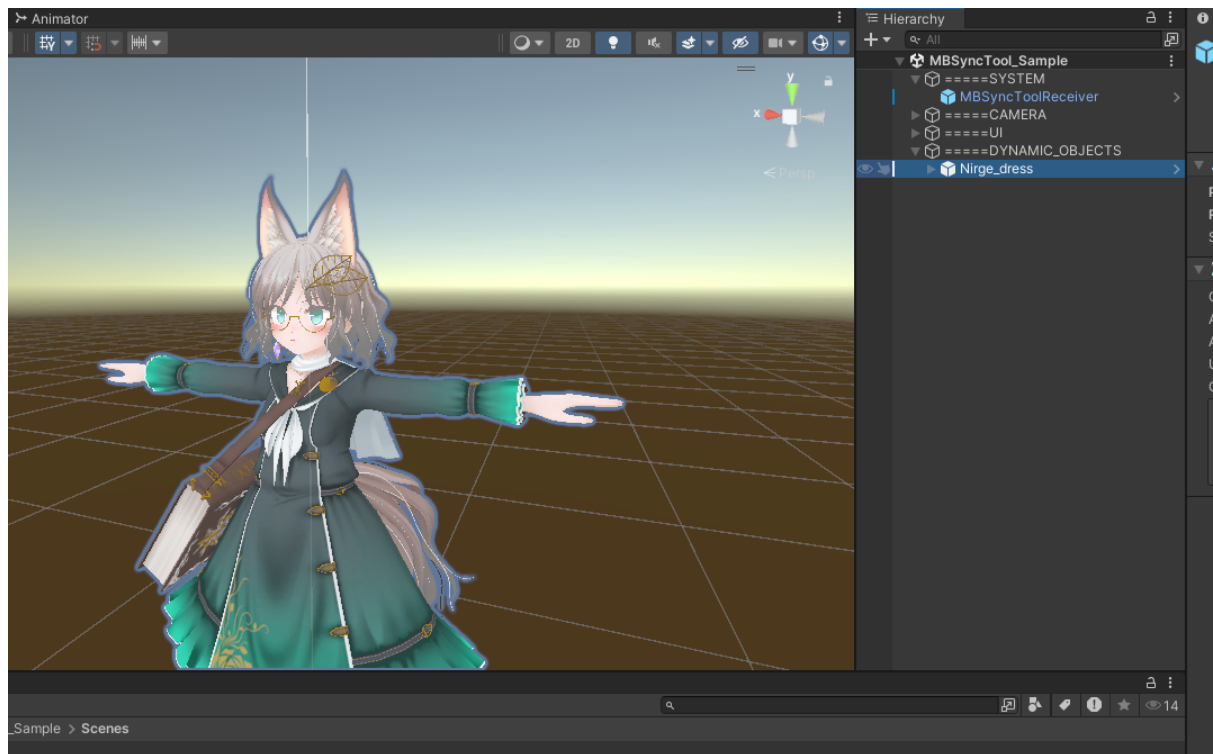


This completes the setup on the Unity side.

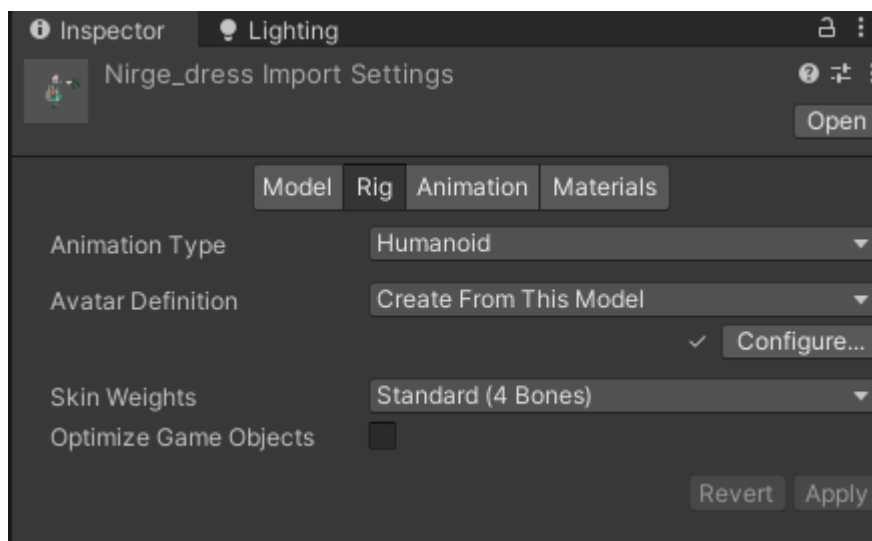
d.Add the model to MotionBuilder and Unity

This is the most important item. If it is wrong, you will not be able to synchronize properly.

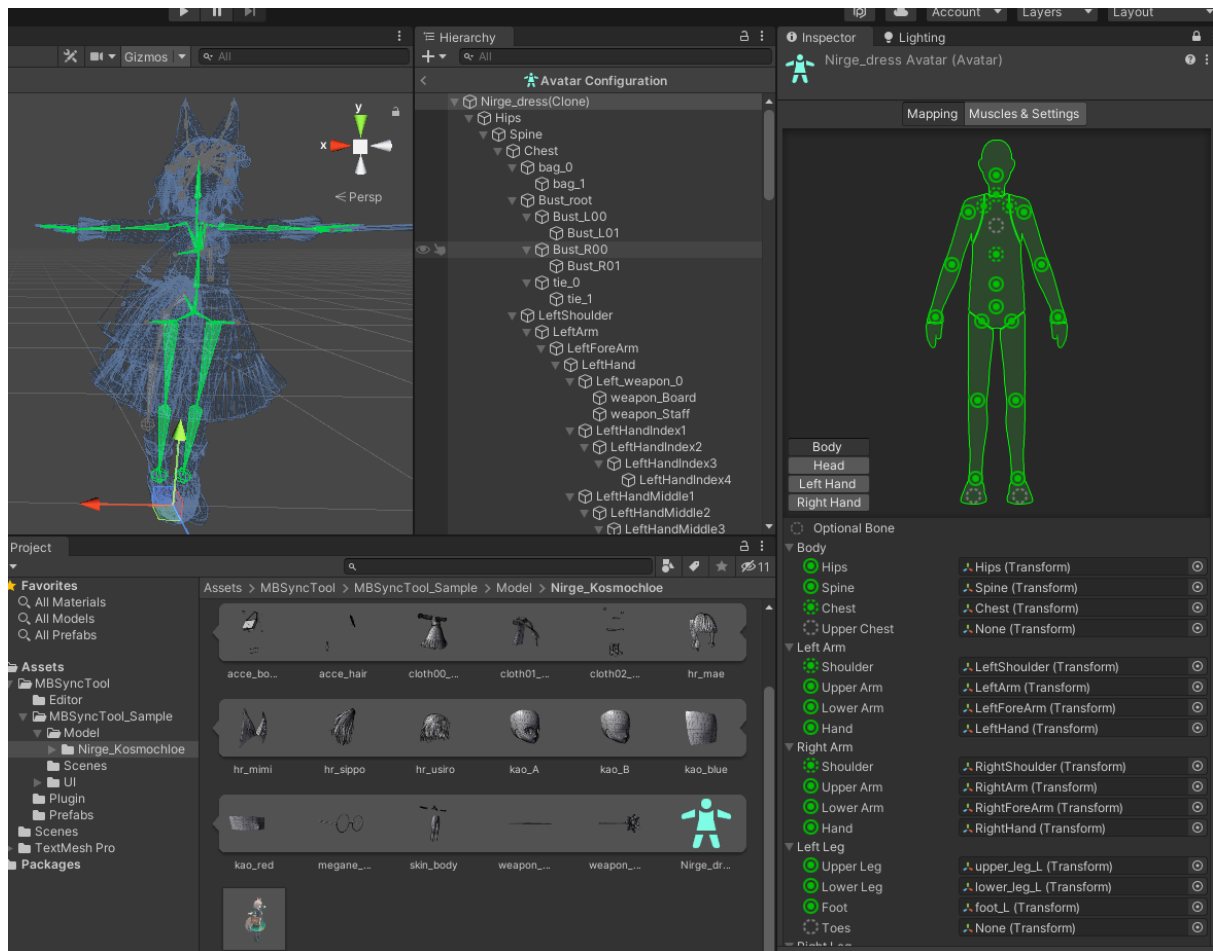
d-1.Sync FBX model



Add the FBX model.

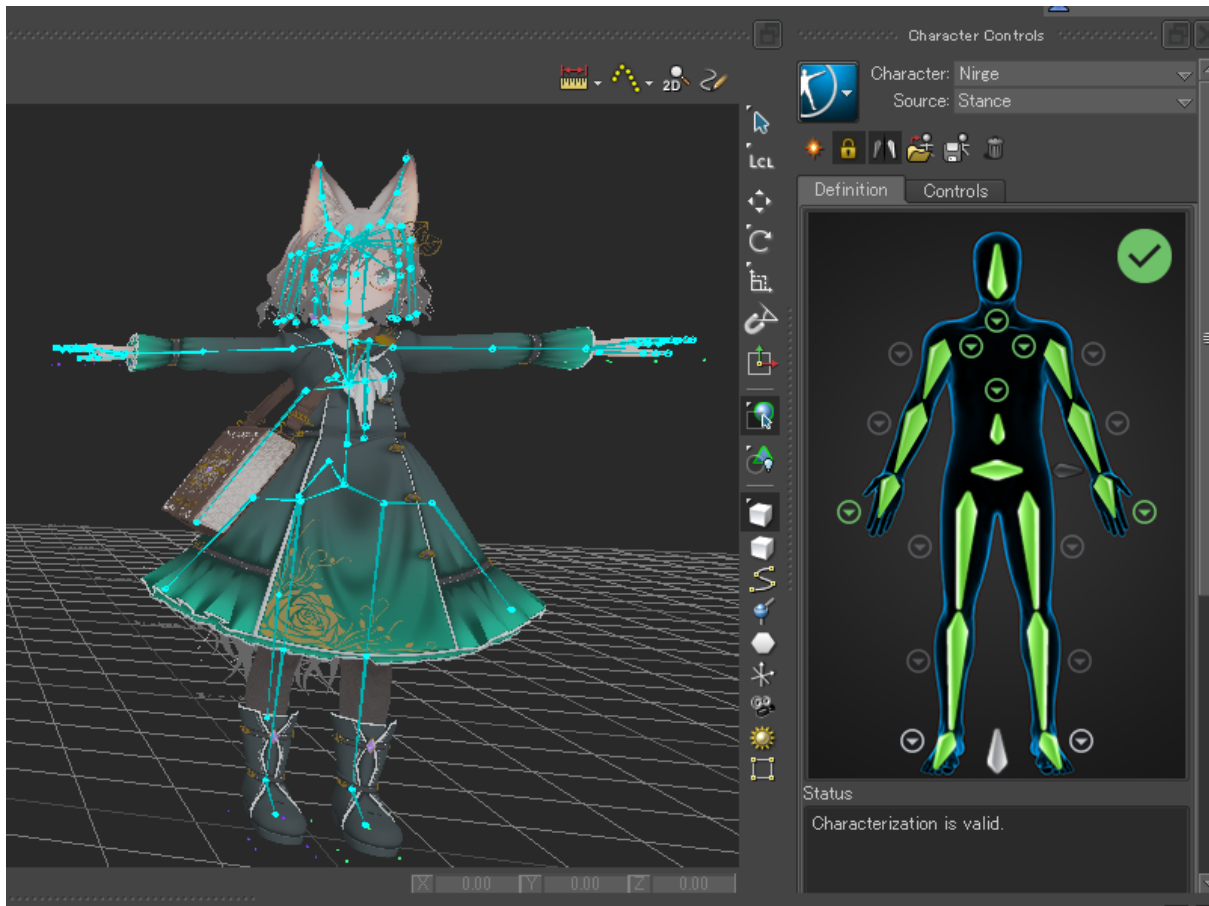


Change the Animation Type to Humanoid.



Mapping is set automatically, but it may fail, so check it.

On the MotionBuilder side, import the same FBX model as the one you added to Unity, and characterize it.



d-2.Sync VRM model

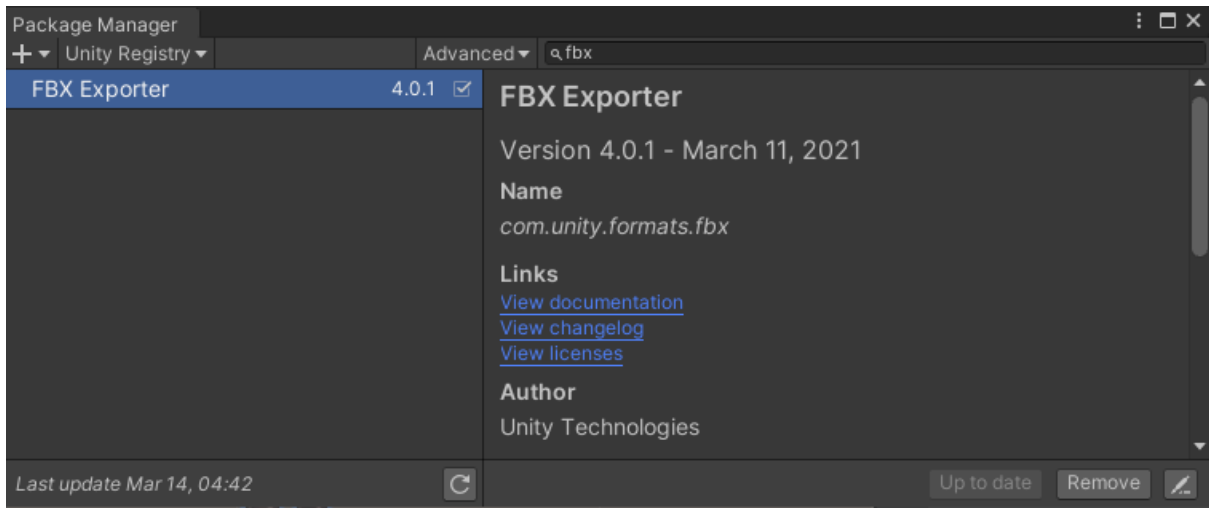
Import UniVRM into Unity and place the VRM model in the scene.

The character to be synchronized must have the same rotation angle offset in MotionBuilder and Unity.

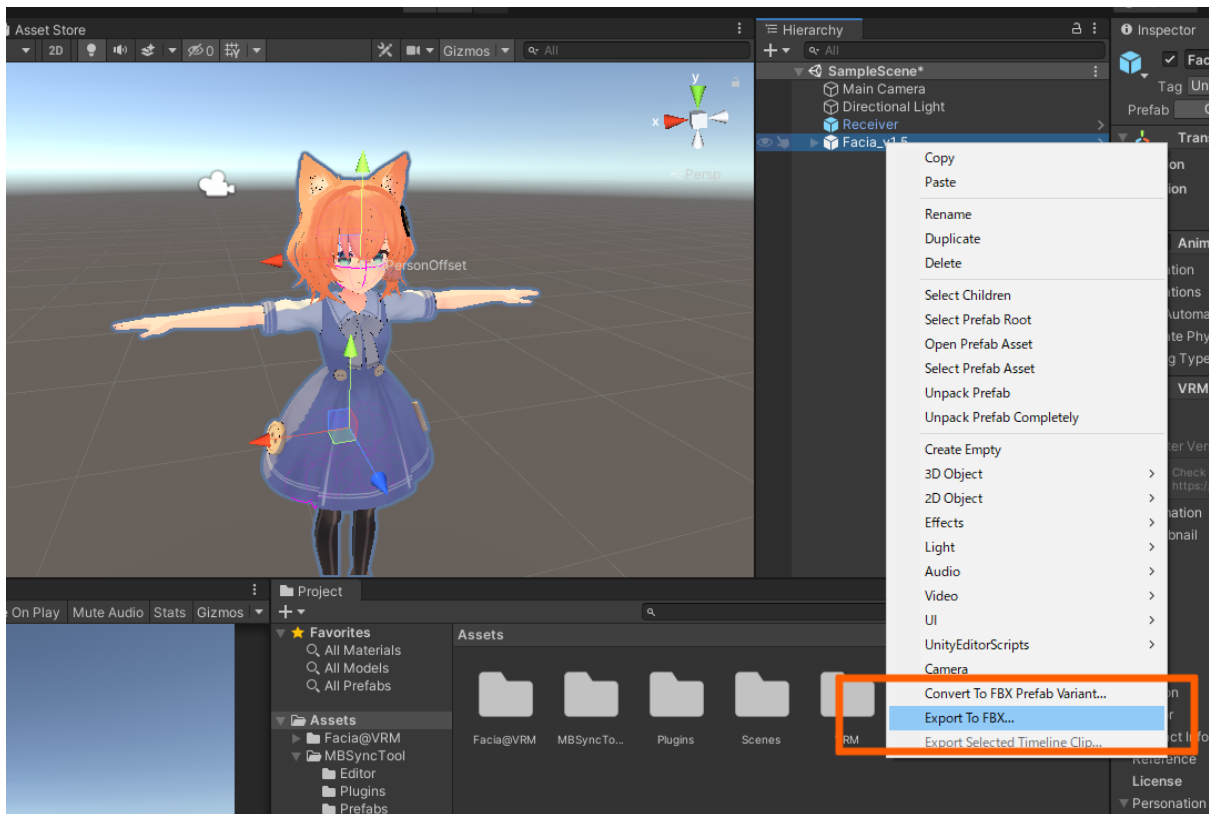
The offset of the rotation angle of the bones must match between MotionBuilder and Unity.

Please note that if they do not match, the synchronization will not work properly.

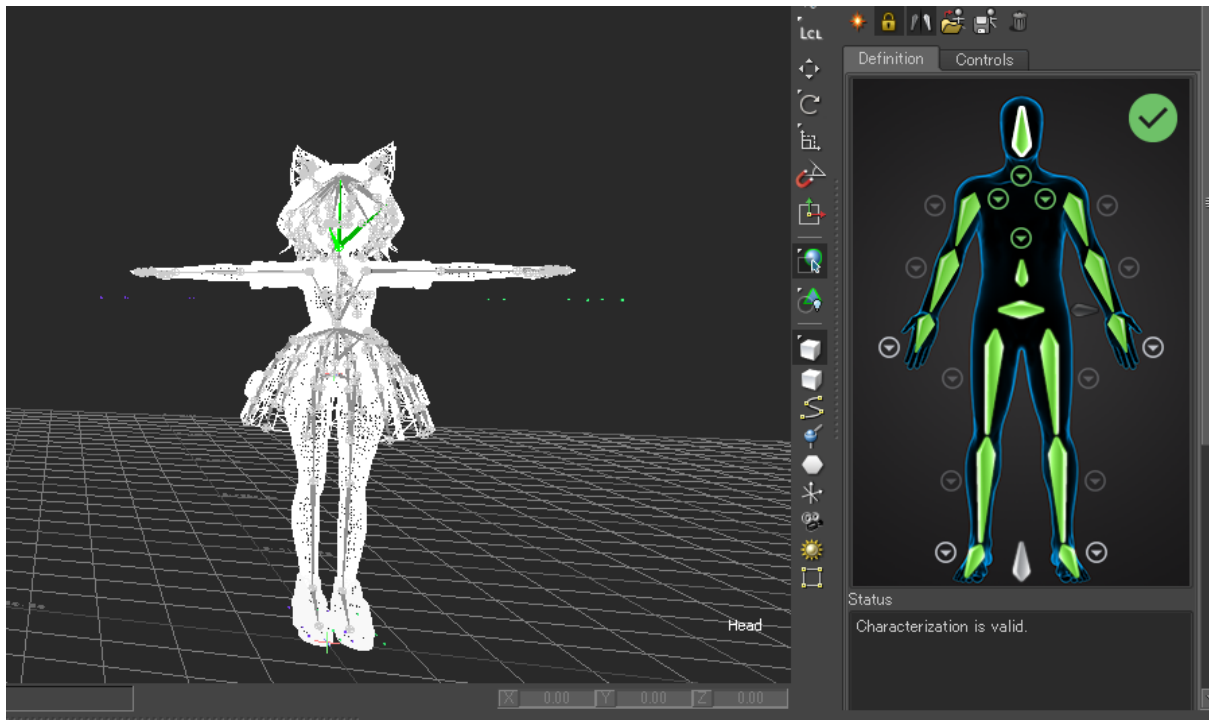
Since the rotation angle of the bones has changed when converting from FBX to VRM. Therefore, the model to be imported into MotionBuilder should not be the FBX before the VRM conversion, but the FBX once output from the VRM using FBXExporter, and then imported into MotionBuilder.



FBX Exporter is installed from PackageManager.



Place the VRM model in the scene and right-click Export To FBX to export the FBX to an appropriate directory.



Open the FBX output from MotionBuilder and characterize it as usual.

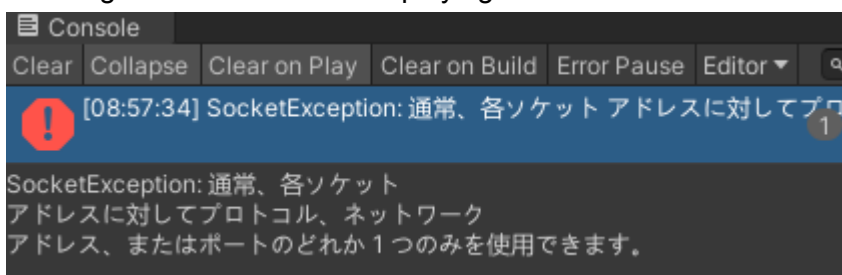
You have now finished adding the model in both MotionBuilder and Unity.

e.Start receiving on Unity

Modify the parameters of the MBSyncToolReceiver placed in the scene.

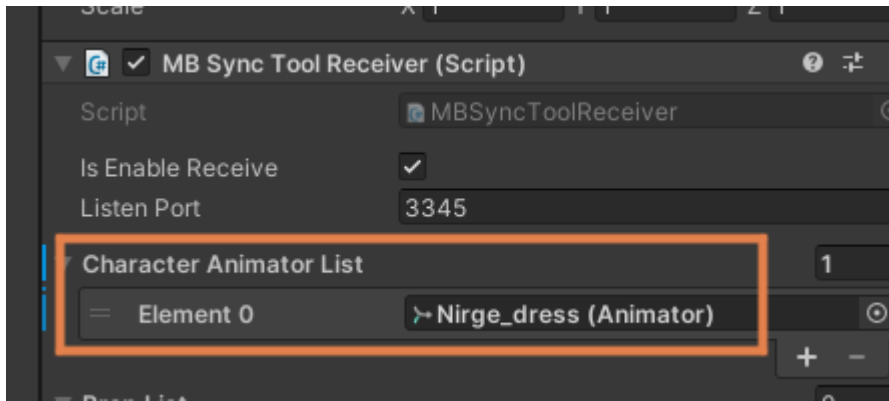
Confirm the Listen Port of Udp Receiver. The **default is port 3345**.

This port number should be selected if it is not already in use. If it is already used, the following error will occur when playing.

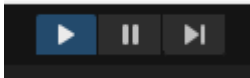


For example, if you want to send motion data to two instances of Unity within one PC, you can use two ports, 3345 and 3346.

Add the model's Animator.



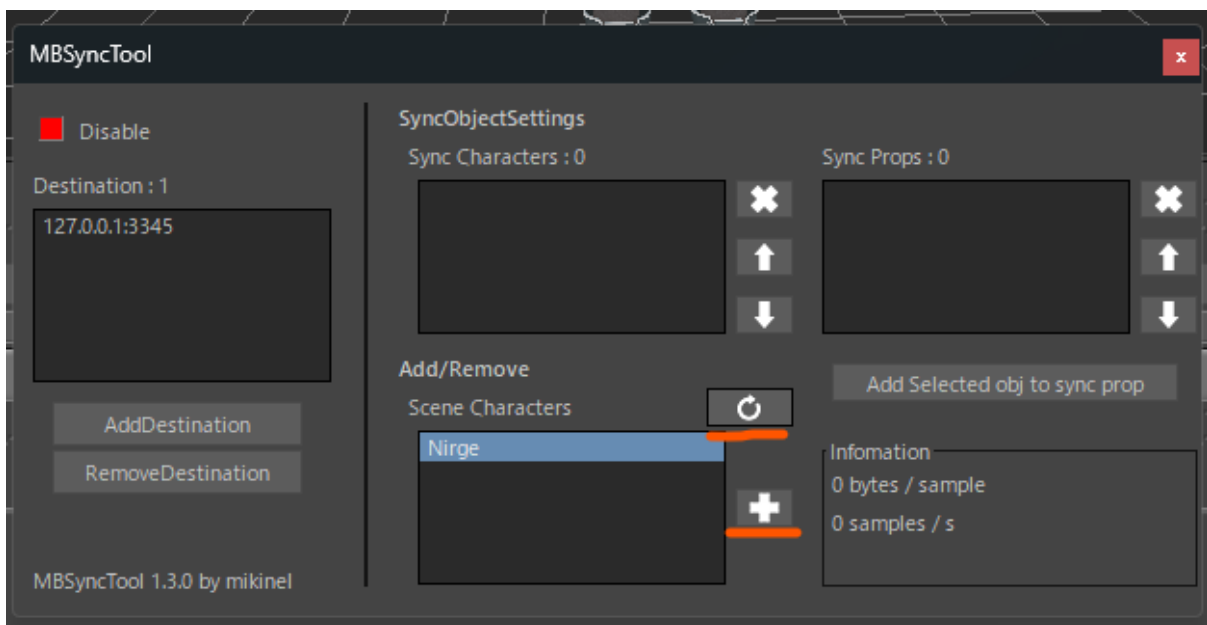
Play it.



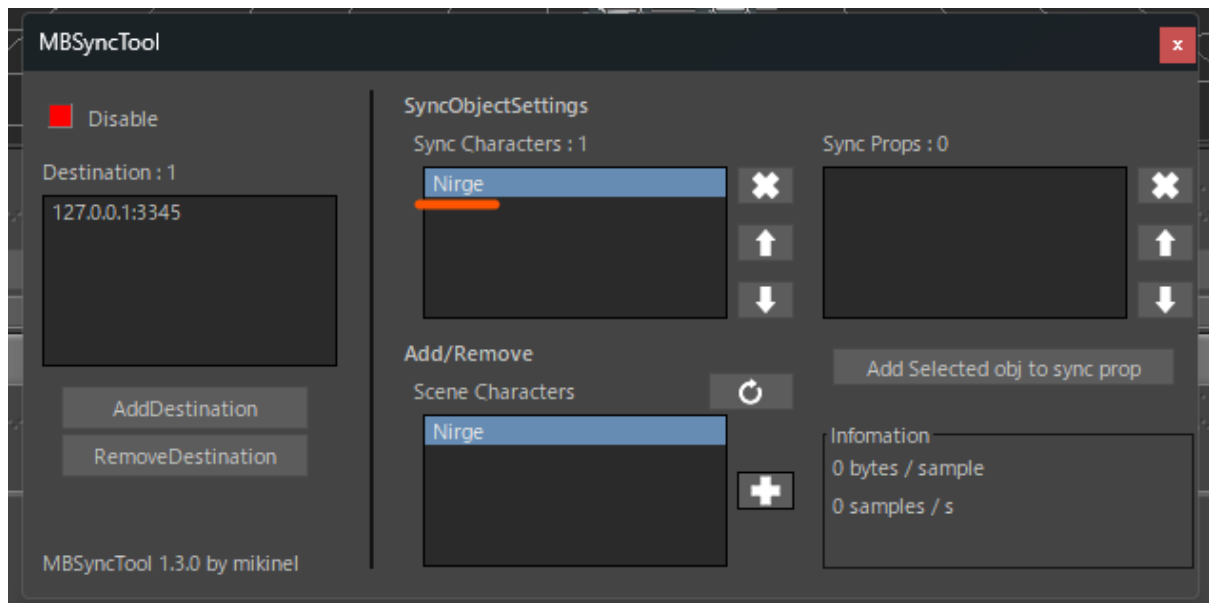
f.Start sending data on MotionBuilder

Select the character to be synchronized from the Characterized objects in SyncTool and click the Click the Add(+) button.

If the character is not found in the list, click the Reload button to get the character again.

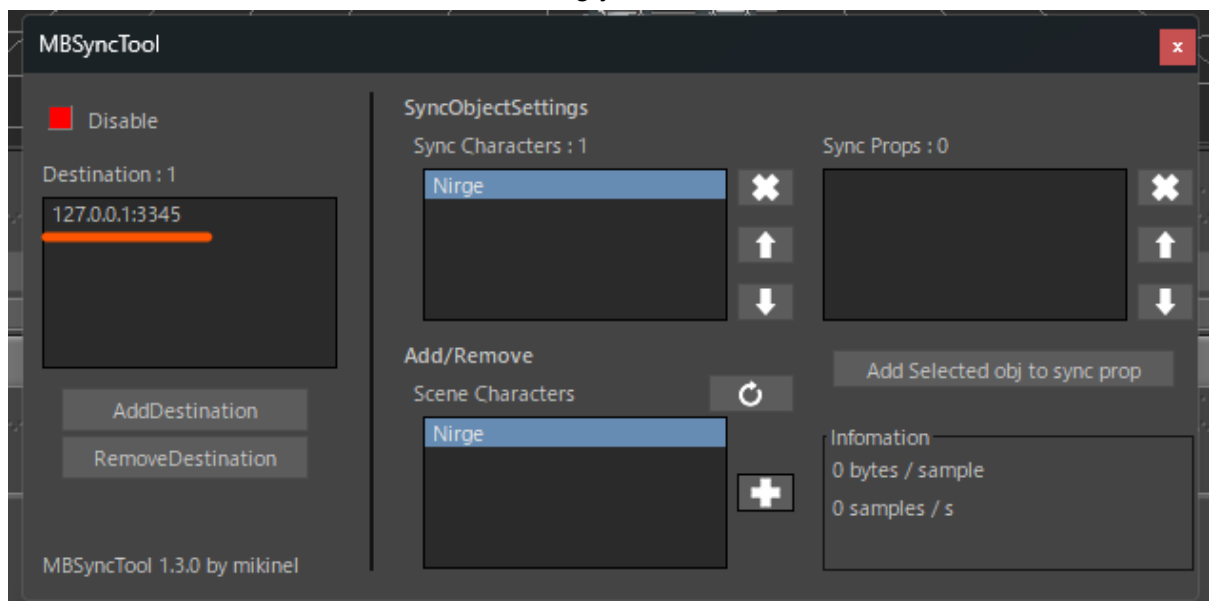


If you are eligible for synchronization, you will be added to the list of Characters as shown below.



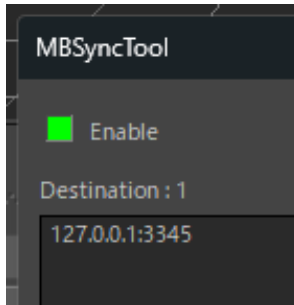
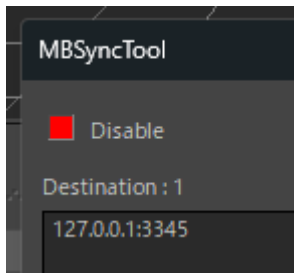
The destination of the data is displayed in Destination.
 You can add a destination by clicking "Add destination".
 When adding a destination, please enter the port number as well.

The default value is 127.0.0.1:3345, meaning yourself.



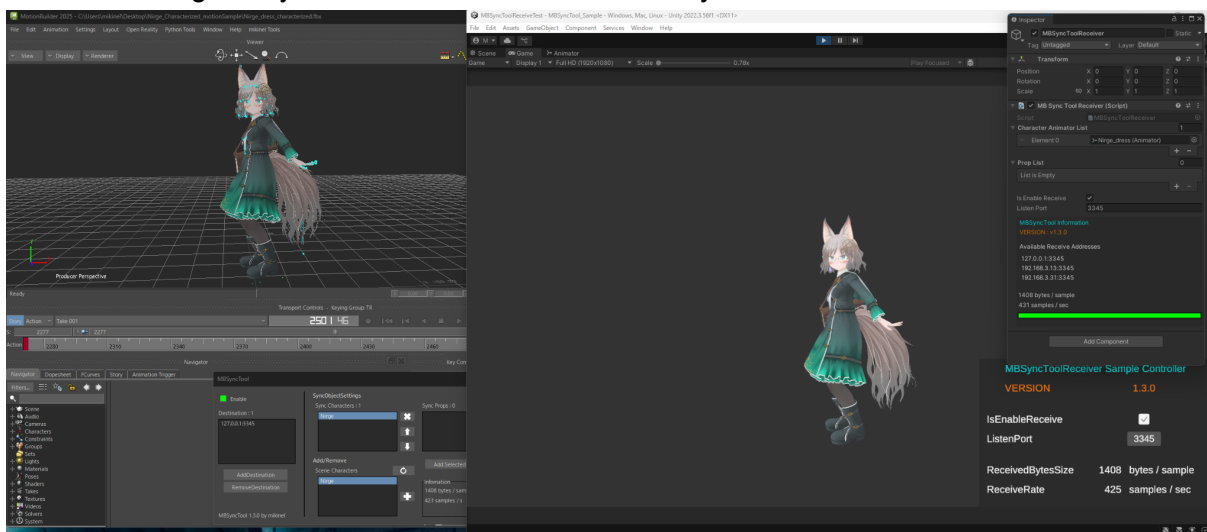
Click on the red button below.

When it turns green as shown below, the data will start sending.



Red = Stopping
Green = Sending

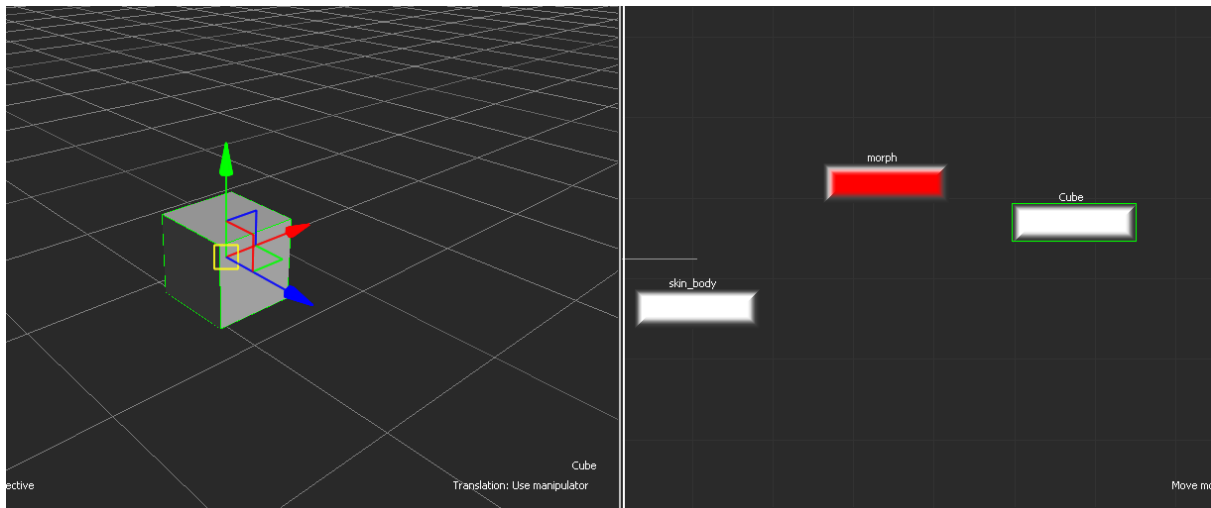
After confirming the synchronization as shown below, you are done.



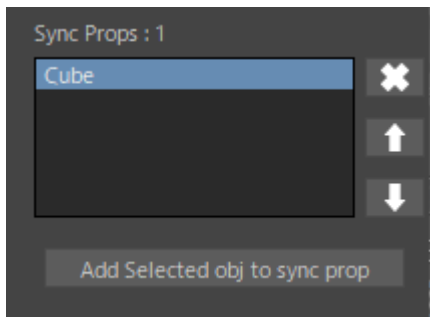
g.Sync props

Prop synchronization is achieved by synchronizing the position and rotation of the nodes to Unity.

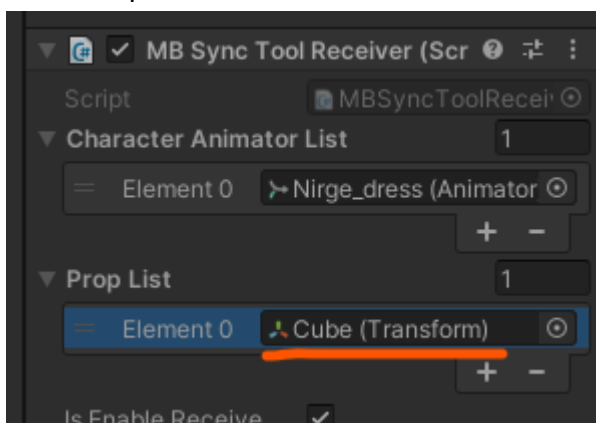
Select one of the nodes you want to synchronize.



Once selected, click the Add selected obj to prop button in Props.



On the Unity side, attach the Transform of the object to be synchronized to the PropList as well as the character.
to the PropList as well as the character.



h. Synchronize multiple characters and PropProp

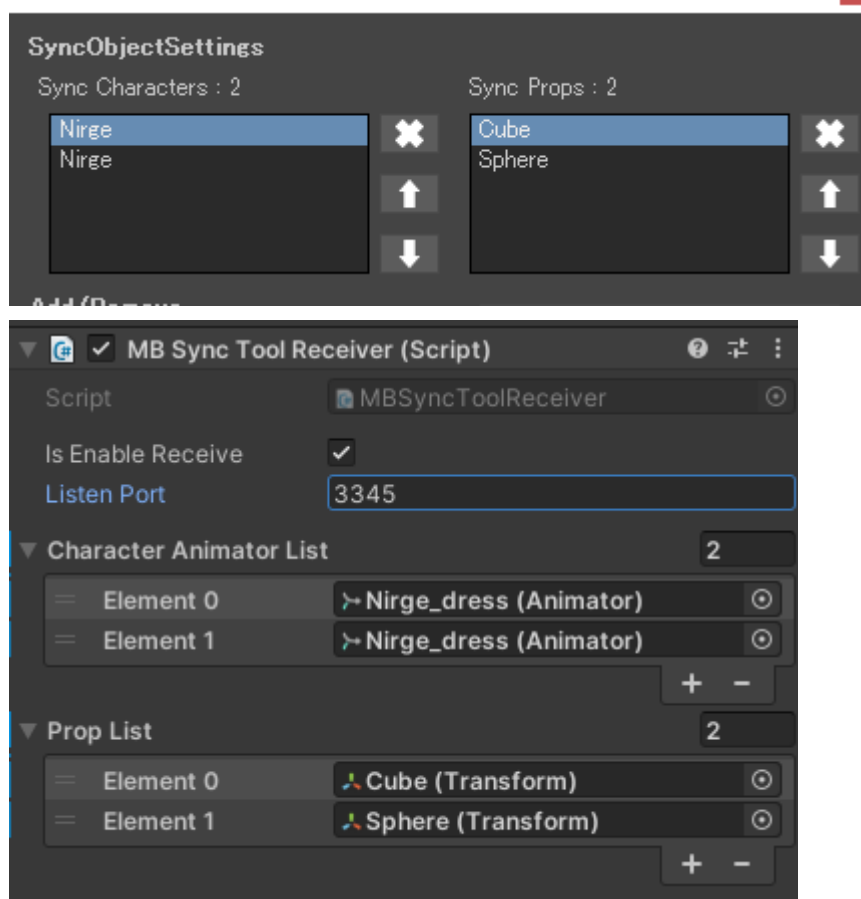
Note : The TRIAL edition has a limit of one character and one Prop.

In the STANDARD edition, it is possible to synchronize multiple characters and Props. You can register multiple characters and props in the same way as in f and g to synchronize them, but

The order of the list of objects to be synchronized in Unity must match that of the list of objects to be synchronized in MotionBuilder.

The MotionBuilder side sends the data in the order of the list, and the Unity list of the object to be synchronized stores the data in that order.

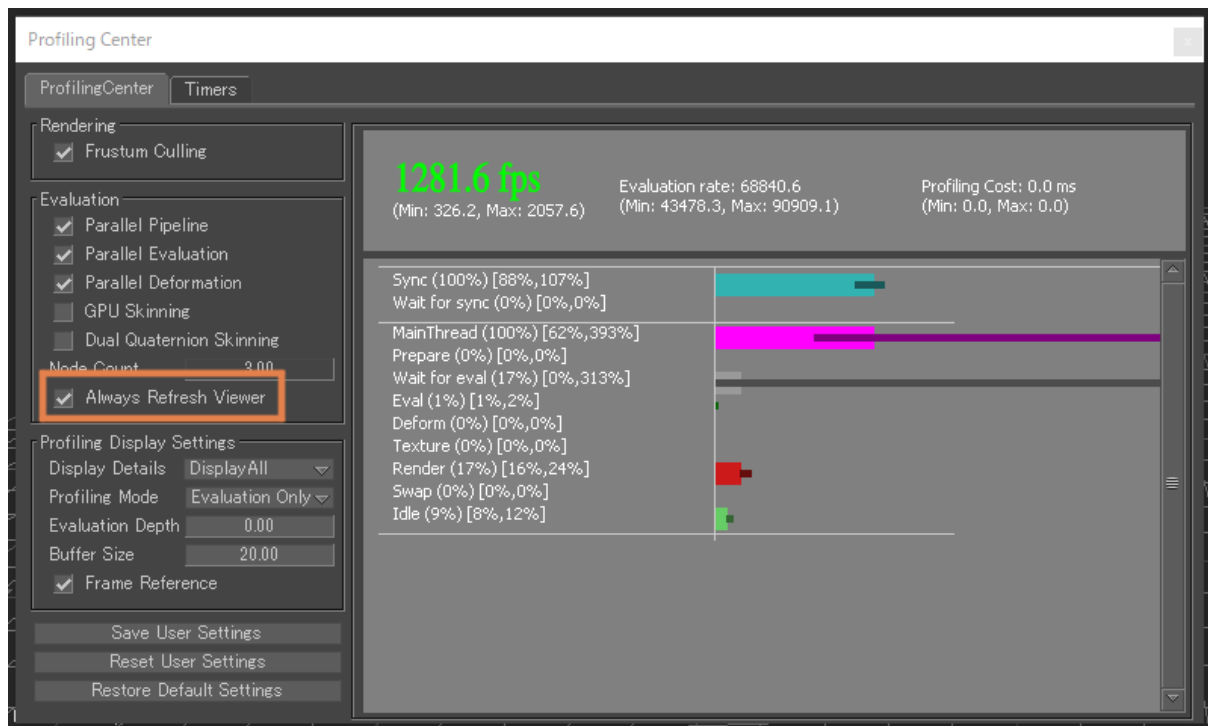
The following is an example of the order matching.



If Add and Remove do not work, reopen the SyncTool.

If it still does not work, restart MotionBuilder.

If the motion stops when the MotionBuilder window is deactivated, check Always Refresh Viewer. (Window -> Profiling Center)

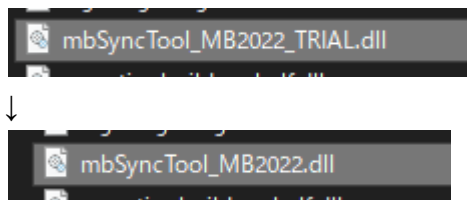


5. How to upgrade to STANDARD edition

b. Install the plugin on the MotionBuilder side. item again.

If you are using the installer and the TRIAL edition has already been installed, it will automatically remove the TRIAL edition and install the STANDARD edition.

If you want to upgrade manually, please copy mbsyncTool_MB20**_TRIAL.dll from the plugins folder to Replace the dll file in the plugins folder with the dll file in the Assets folder.



There is no need to change anything on the Unity side.

6. Contact

mikinel

X (Twitter) : @kemmimilk

Please contact us using the Booth message function or DM on Twitter.