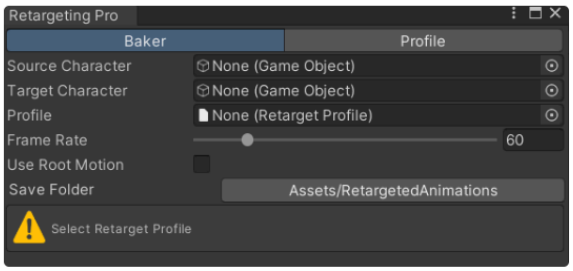
Please, make sure to visit the **Online Documentation**, as this file might not be up to date.

★ Overview

In this section we will cover the basics.

Retarget Pro is an **editor** tool, and it can be found in **Window/KINEMATION/Retargeting Pro**:



Retarget Pro Window.

> **Tip:** it is also possible to retarget multiple Animation Clips and even Animator Controllers by just **right-clicking** on desired assets.

In order to retarget an animation, the system relies on:

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- **Retarget Profile** - defines retargeting settings for different bone chains.
- **Rig Assets** - contains the skeleton hierarchy and bone chains.

> **Tip:** this plugin provides example assets, which can be used for retargeting right away. They are located in **KINEMATION/Retarget Pro/Presets**.

It is also highly recommended to download the **GitHub Demo Project**, as it contains more examples and animations, which can be a great starting point.

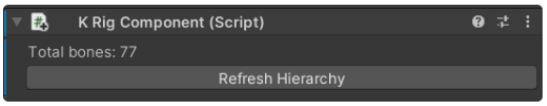
In the next section, we are going to dive into the **Rig Assets** and how to prepare characters for animation retargeting.

Character Rigs

In this section you will learn how to prepare character skeletons to work with the plugin.

Rig Component

Add your character to the scene and add the **Rig Component** to the root bone of the skeleton hierarchy. Usually, this bone is called **Root** or **Hips**:



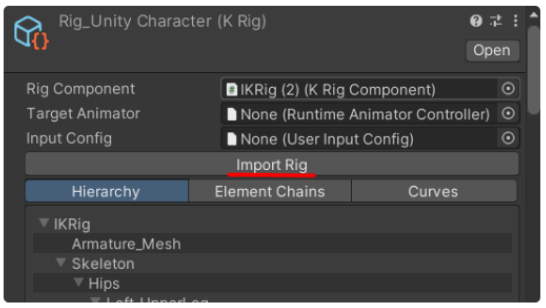
Make sure to click this button.

Refresh Hierarchy will find all the bones in the skeleton and register them.

> **Note**: this component plays an important role, so make sure to apply changes to the character prefab.

Rig Assets

Retarget Pro relies on **Rig Assets** to store the information about the character skeleton. To create such an asset, right click and go to **Create → KINEMATION → Rig**:



Rig Asset.

Now drag the **Rig Component** we created in the previous step to the respective **Rig Asset**, and click the **Import Rig** button. This action will initialize the asset and build a hierarchy for it.

> **Tip:** make sure to save the **Rig Asset** after importing the hierarchy!

Element Chains

Now we need to set up Element Chains. **Retarget Pro** will try to match bone chains, and if it succeeds, it will retarget animation from one chain to another.

> **Note:** make sure to use the same naming convention for all bone chains. If there is a difference in naming, the system might not automatically match the chains.

For a standard humanoid character you will need 9 bones chains:

- Pelvis
- Right Leg
- Left Leg
- Spine
- Neck
- Right Arm
- Left Arm
- Fingers
- Toes
- Weapon bone (optional)

> **Tip:** you can press **Shift + LMB** to select multiple bones at the same time.

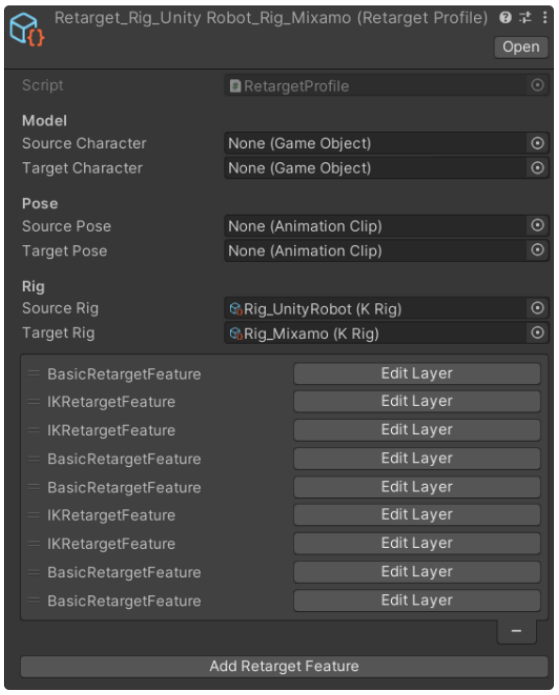
Now, when Rig Assets are prepared for source and target characters, it is time to define retargeting settings.

Retarget Profile

In this section you will learn about retargeting profiles.

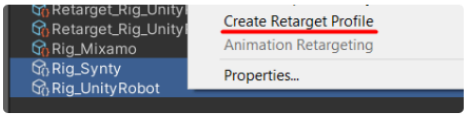
Creating a Profile

Retarget Profile contains settings for our retargeting process. You can create a new profile by right clicking and going to **Create → KINEMATION → Retarget Profile**:



Example Retarget Profile

It is possible to create a new profile, by selecting 2 Rig Assets:



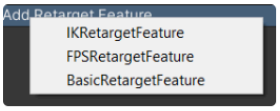
Automatic profile setup.

This will automatically map the bone chains and set up the features, so you can use the profile right away. The first selected object will count as "source", and the second one as "target".

> **Tip**: it is generally a good idea to have multiple profiles for a single character. Some animations might require additional tweaking, like reloading animations for a shooter game for instance.

Adding Features

It is possible to manually add features to the profile by clicking the **Add Feature** button. So far the system supports 3 types of features:



Retarget features.

In the next section, we are going to cover the difference between them and popular use-cases.

Retarget Features

In this section you will learn about retargeting settings.

Basic Retarget Feature

This feature uses a direct retargeting algorithm, which is based on computing the delta between the source and target skeletons. It is also capable of adjusting the bone position, which is great for weapon bones.

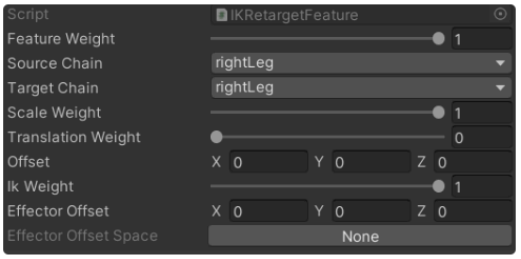
Basic Retarget Feature inspector.

- **Feature Weight**: controls the influence of this feature. 1 means 100% applied, 0 means 0% applied.
- **Scale Weight**: controls the influence of the animation scale. It is computed based on the bone chain length difference between 2 skeletons. If set to 1, the scale will not be affected. You usually want to keep this value at 1 most of the time.
- **Translation Weight**: defines how much of the original translation will be used. It is only useful for Pelvis and Weapon bones. Set this to zero for other bones, unless you want to retarget world translation as well.
- **Offset**: defines the world offset for all bones in the chain. Only useful for single-bone chains, like Pelvis or Weapon bone.

> **Tip:** this feature works great for general chains, that do not require accuracy. Examples: spine, fingers, neck. It is also crucial for single elements, like weapon or pelvis.

IK Retarget Feature

This feature uses an IK algorithm to provide a more realistic result. This feature is derived from the **Basic Retarget Feature**, so it has similar properties:



IK Retarget Feature Settings

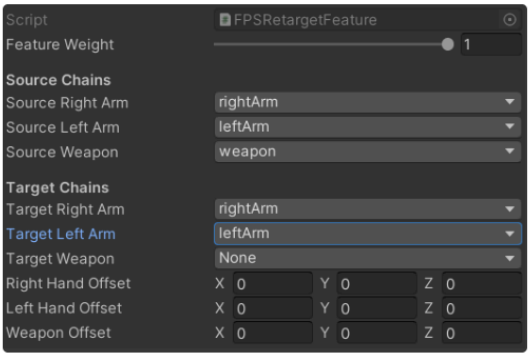
- **IK Weight**: controls the IK influence. 1 means 100% applied, 0 means no effect.
- **Effector Offset**: contols the translation offset of the IK target. The IK target is the last bone in the chain, so that is why your arm and leg chains must end with hand or foot.
- **Effector Offset Space**: defines the space the Effector Offset will be applied in. Usually you want to select the root bone here.

There are no limits for the number of elements in the IK chain. This feature will work well, even if there is a difference between source and target bone chains.

> **Tip**: IK is perfect for legs and arms, as it will provide a more accurate motion.

FPS Retarget Feature

This feature was specifically designed for reloading animations. It works similarly to the IK Feature, the only difference is the way IK is applied - the system directly copies/pastes the data without any scaling, which fully preserves the motion.



FPS Retarget Settings

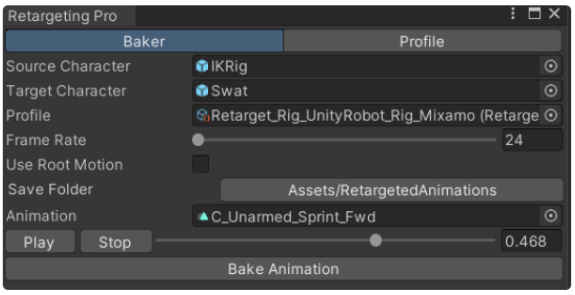
- **Right Hand Offset**: position offset for the right hand in weapon space.
- **Left Hand Offset**: position offset for the left hand in weapon space.
- **Weapon Offset**: viewmodel positiong offset.

Previewing and Baking

In this section you will learn how to preview and bake animations.

Baking

Retarget Pro offsers a simple way to retarget animations right in the editor. The main editor window is located at **Window → KINEMATION → Retargeting Pro**:



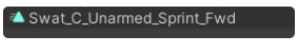
Retarget Window.

> **Tip:** you can specify characters right in the scene.

To start a preview of the retargeting process, make sure to press the "Start" button. After that, you will be able to control the playback of the animation:

Dynamic retargeting preview.

In the **Retarget Profile** tab you can edit the profile right in this window. Once you are satisfied with the retargeting quality, press the "**Bake Animation**" button. It will automatically create a new animation for the **Target Character**:



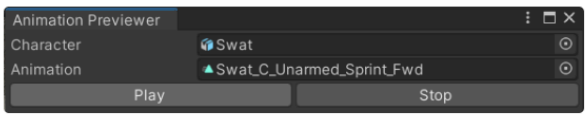
Retarget output.

> **Tip:** it is also possible to retarget multiple Animation Clips or Animator Controllers by right-clicking on desired assets.

Let's see how we can preview our new animation!

Previewing

To preview an animation go to **Window → KINEMATION → Animation Previewer**:



Press "Play"

After that a retargeted motion should play as baked animation:

Successfully retargeted animation!

> **Note:** the system is going to use a Generic Animation Baker to bake the animation. At the current state, baking for Unity Humanoid system is not supported.