# Animation Baker Manual

What is Animation Baker?

Animation Baker helps you to convert animations retargeted by Mecanim into unity legacy animations. I.e. you can retarget any animations from some humanoid characters onto your character through Mecanim as usual and bake resultant animation into Unity *.anim file.
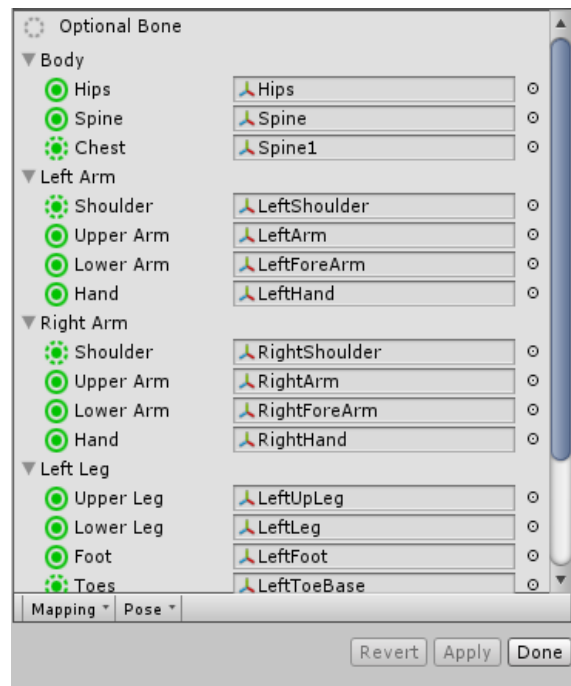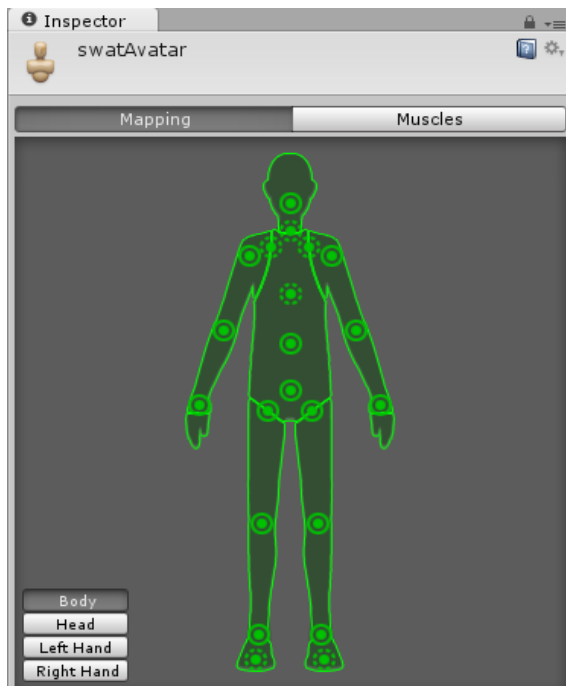
How to bake animation for my character?

1) Configure your character for Mecanim as usual:
- create avatar for your character
- configure characters avatar
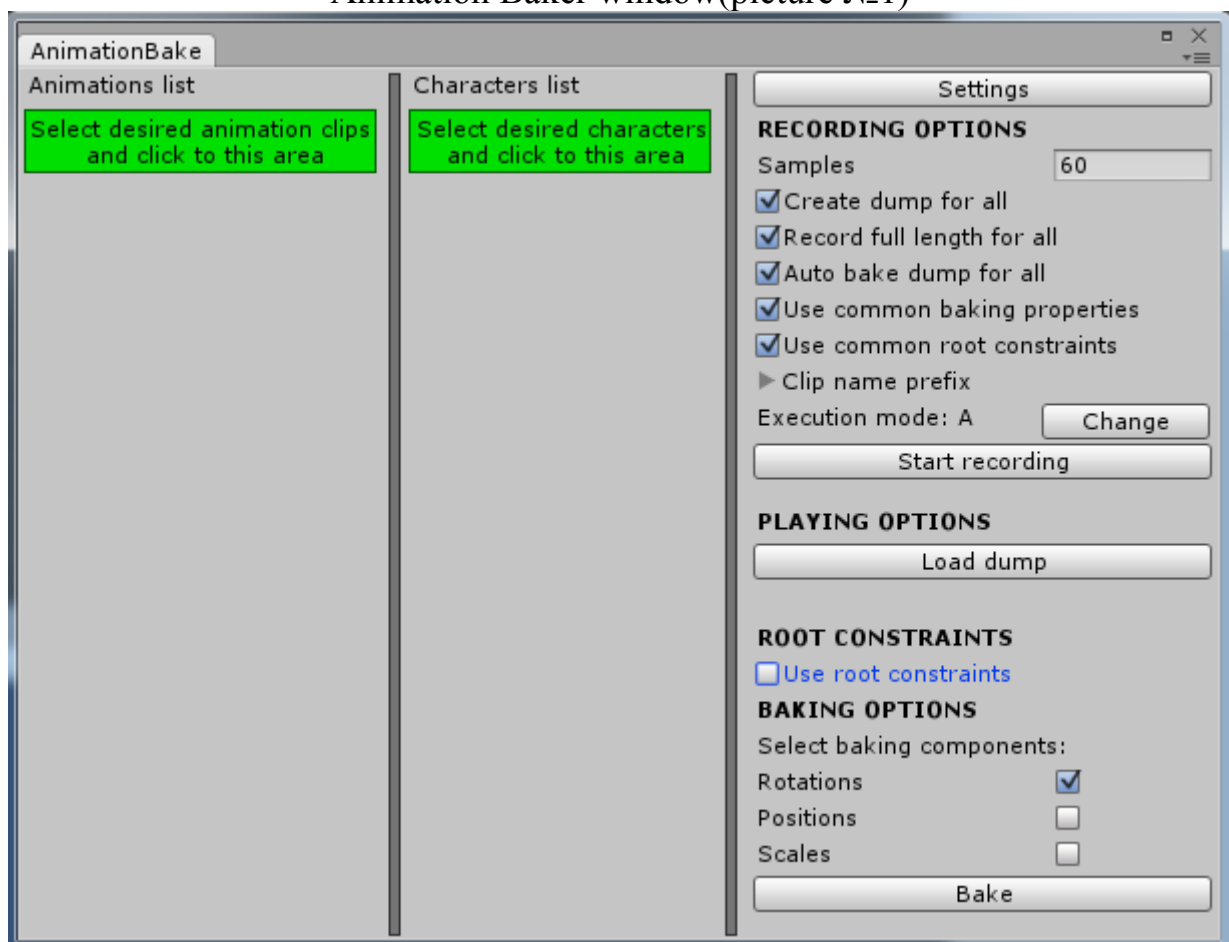2) Retarget animation from some character onto your character and bake it

Select your character model, in the inset "Rig" set animation type as "Humanoid" and avatar definition - "Create From This Model" then press button "Configure". In the inset "Mapping" by default enabled auto-mapping, due to this, image of humanoid should fully be of green color.
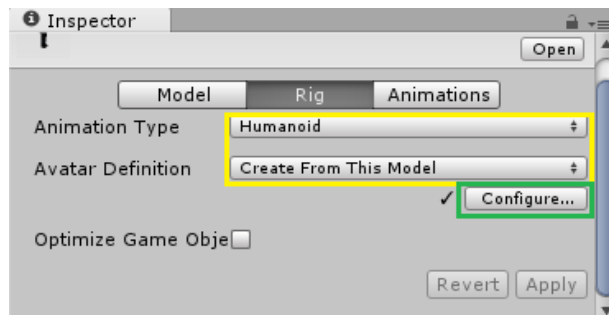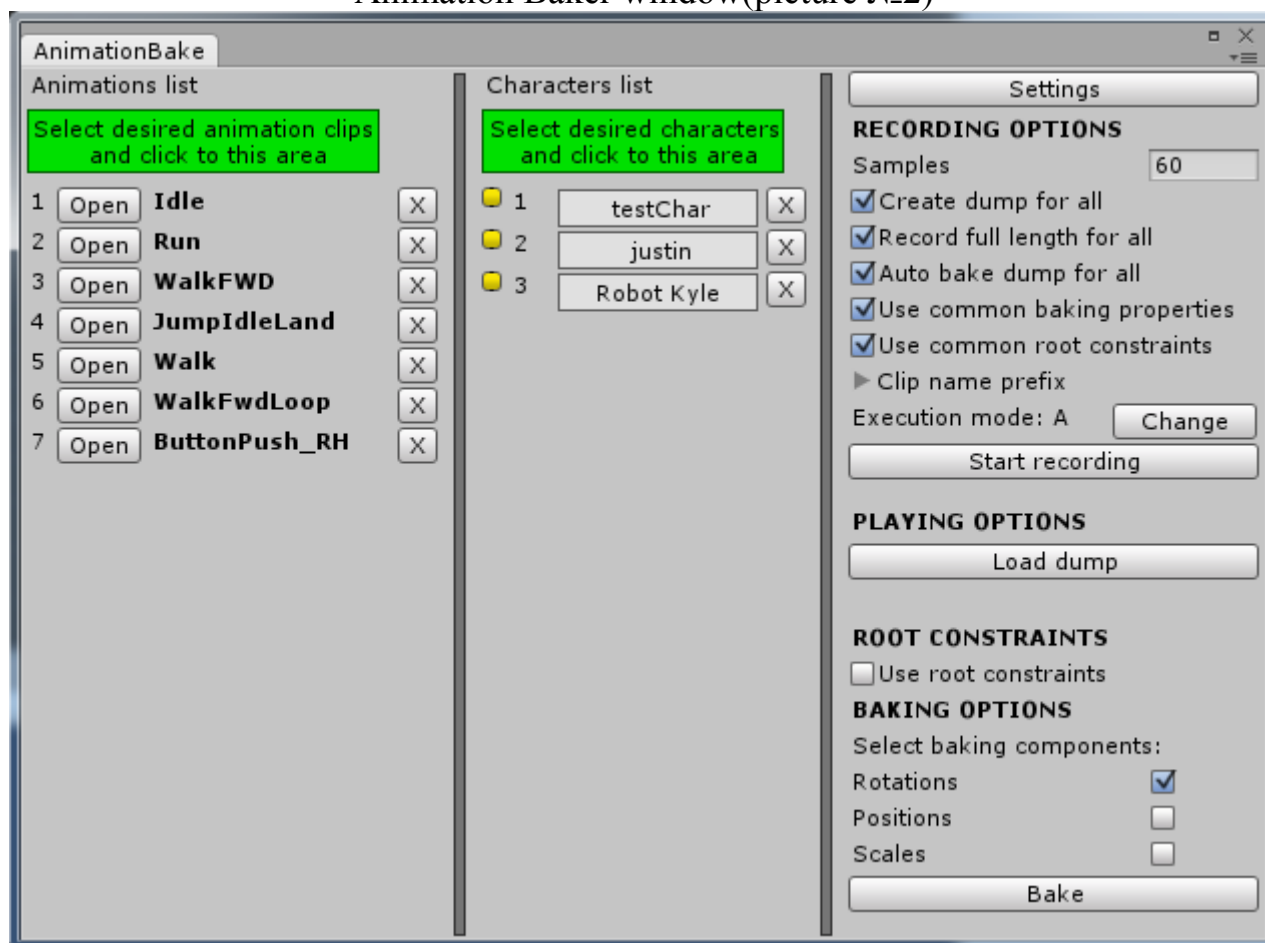

If you got some red pointers in there, then manually assign or remove problematic bones. In the inset "Muscles" you can check effect of muscle links. From now your character is ready for baking, next step is retargeting of desired animation onto skeleton of this character. Choose desired animation for baking, let's use for example Raw Mocap Data from Unity Technologies and Soldier Character Pack from Mixamo (you can load both assets for free from Unity Asset Store): open any folder with some animation files and open one of *.fbx files to see animation clip, open Animation Baker window (execute "Window/AnimationBaker" from main menu of Unity editor). Select desired animation clips in the project view and click on green area inside section "Animations list", in same way select desired characters and click on green area inside section "Characters list", press button "Start recording". After this AnimationBaker will start baking process, you will see progress bar for current animation. You can add any number of characters and animations for baking in the same way. After baking process finished inside Animation Baker root directory, in the "UnityAnimations" folder (by default) appear folder with character's name, containing resultant *.anim file .
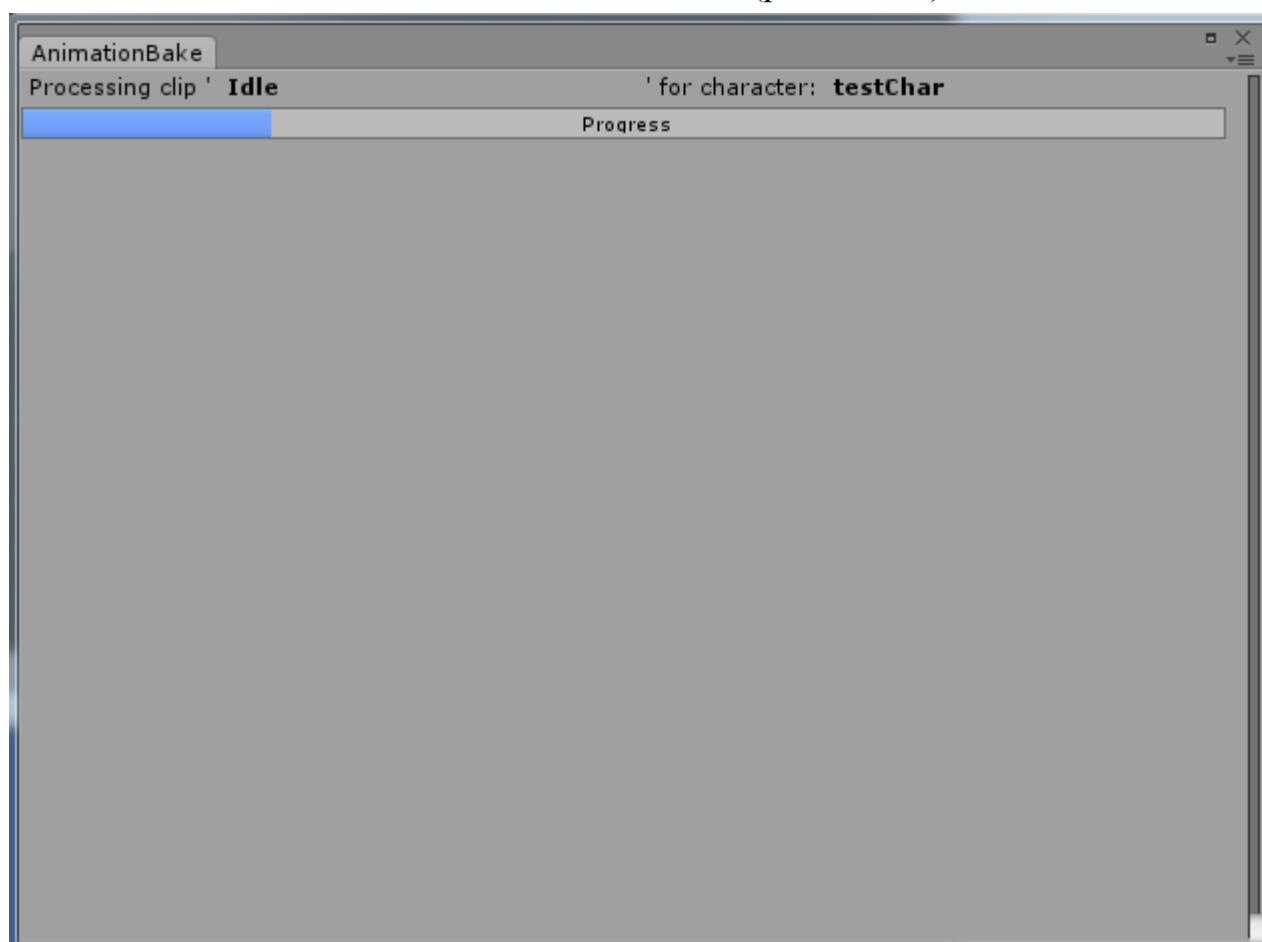
Inspector
swatAvatar

Mapping | Muscles

Body
Head
Left Hand
Right Hand

Optional Bone
▼ Body
  ○ Hips — Hips
  ○ Spine — Spine
  ○ Chest — Spine1
▼ Left Arm
  ○ Shoulder — LeftShoulder
  ○ Upper Arm — LeftArm
  ○ Lower Arm — LeftForeArm
  ○ Hand — LeftHand
▼ Right Arm
  ○ Shoulder — RightShoulder
  ○ Upper Arm — RightArm
  ○ Lower Arm — RightForeArm
  ○ Hand — RightHand
▼ Left Leg
  ○ Upper Leg — LeftUpLeg
  ○ Lower Leg — LeftLeg
  ○ Foot — LeftFoot
  ○ Toes — LeftToeBase

Mapping ▾ | Pose ▾

Revert | Apply | Done

Animation Baker window(picture №1)

AnimationBake

Animations list
Select desired animation clips and click to this area

Characters list
Select desired characters and click to this area

Settings

RECORDING OPTIONS
Samples   60
☑ Create dump for all
☑ Record full length for all
☑ Auto bake dump for all
☑ Use common baking properties
☑ Use common root constraints
▶ Clip name prefix
Execution mode: A   Change
Start recording

PLAYING OPTIONS
Load dump

ROOT CONSTRAINTS
☐ Use root constraints
BAKING OPTIONS
Select baking components:
Rotations   ☑
Positions   ☐
Scales   ☐
Bake

Animation Baker window(picture №2)

AnimationBake		
Animations list	**Characters list**	**Settings**

Animations list

Select desired animation clips and click to this area

1 | Open | **Idle** | X
2 | Open | **Run** | X
3 | Open | **WalkFWD** | X
4 | Open | **JumpIdleLand** | X
5 | Open | **Walk** | X
6 | Open | **WalkFwdLoop** | X
7 | Open | **ButtonPush_RH** | X

Characters list

Select desired characters and click to this area

● 1 | testChar | X
● 2 | justin | X
● 3 | Robot Kyle | X

Settings

RECORDING OPTIONS
Samples   60
☑ Create dump for all
☑ Record full length for all
☑ Auto bake dump for all
☑ Use common baking properties
☑ Use common root constraints
▶ Clip name prefix
Execution mode: A   Change
Start recording

PLAYING OPTIONS
Load dump

ROOT CONSTRAINTS
☐ Use root constraints
BAKING OPTIONS
Select baking components:
Rotations   ☑
Positions   ☐
Scales   ☐
Bake

Animation Baker window(picture №3)

AnimationBake	

Processing clip ' **Idle**   ' for character: **testChar**

Progress

Properties of Animation Baker
Recording options

In the section "Recording options" are parameters that responsible for animation dumping process.

Samples – number of frames per second for sampling recorded animation.

Record full animation length for all – this flag determines whether the animation recording time must be taken as original animation clip length for each processing animation. If flag is not set, you will be abble to enter custom value in seconds of recording time for each animation clip by pressing "Open" button for desired animation in section "Animations list".

Create dump file for all - if this flag is set then recorded animation dump will be saved as *.anm file for each processing animation and can be loaded and baked at any time, otherwise recorded animation dump will be lost after exiting from play mode. Path for saving animation dump can be changed through fold out menu "Dump file path". The dump file may be useful if you want bake couple variations of dumped animation, dump file contains all bones translations(rotations,scales,positions) so you can bake different bones translations properties without unnecessarily record same animation each time.

Auto bake dump for all – if flag is set then animation dump of each processed animation will be baked into *.anim file.

Use common baking properties – if flag is set then baking properties determined in section "Baking properties" will be applied to each processed animation, in other case you can set individual baking properties for each animation before baking by pressing "Open" button in their properties.

Use common root constraints – if flag is set then root constraints determined in the section "Root constraints" of main menu of Animation Baker will be baked to all processed animations but only if flag "Use root constraints" of "Root constraints" section is set. In other case you can set individual root constraints for each animation by pressing "Open" button in their properties.

Clip name prefix. You can add prefix to name of created clip in order to make it more informative.
Use model name prefix – if flag is set then character's name will be added to resultant clip name.
Use frame rate prefix – if flag is set then sample rate of created clip will be added to its name.

Execution mode. This option allows you to select desired execution order of baking,

existing modes:

- Mode A – in this mode all animations from animations list will be processed for current character model, after that next character will be selected and process will repeat.

- Mode B – in this mode current animation will be processed for all characters from characters list, after that next animation will be selected and process will repeat. You can change execution mode by pressing button "Change".

Start recording – by pressing this button you can start or finish recording of animation dump.

Playing options

Section "Playing options" contains parameters that responsible for playing preview of created animation dump. It's can be useful if you want to see how looks recorded animation before bake it.

*Note: Preview player plays animation without frame interpolation at frame rate at wich it was recorded into dump file, so don't worry if animation recorded at small frame rate looks little bit intermittent, final *.anim file will not have this issues.*

Play preview – by pressing this button preview playing can be started or skipped.

Load dump – by pressing this button you can load animation dump file in order to bake it into *.anim file or play preview.
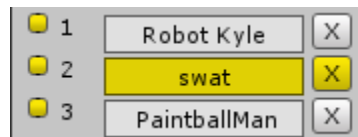
Note: in order to play preview of desired dump file, you have to load it, add desired character into characters list and select it by pressing little yellow button in front of character's field, current field becomes yellow and you may press button "Play preview".

Root constraints

Section "Root constraints" has parameters that responsible of translation of root bone of character's skeleton. It uses for baking constraints to *.anim file and to constraint root bone when playing dump preview.

Use root constraints - if this flag is set then root constraints becomes available for preview mode and baking, in other case this constraints will be ignored by baking process and preview mode.

Root position constraints – controlls skeleton root translation by x,y,z coordinates

during playing of animation dump.

Root rotation constraints - controlls skeleton root rotation around x,y,z axes during playing of animation dump.

Root scale constraints - controlls skeleton root scaling by x,y,z coordinates during playing of animation dump.

Baking options

Section "Baking options" contains parameters that responsible for baking of created animation dump file into Unity *.anim file. Here you can select desired componenets of bones translation that must be baked.You can select the output folder for saving resultant animations in the menu "Settings".

Select baking components – here you can select desired components of bones translations that must be baked(rotations, positions, scale). By default selected only rotation parameters, in this case positions changing and scaling will be not baked into resultant *.anim file, but you can include that if you need.

Individual animation baking properties

You can open individual baking options for each animation that you added to animations list, just press button "Open" in front of animation field in "Animations list " section. It may be useful when you want to set up custom baking properties for each animation. All properties of this menu except couple differences are similar to main menu properties. For example recording time field with value -1 means that full length of this animation must be taken as recording time, if you want to set custom recording time just enter any value >0. Also in this menu you can select characters for each of which this animation will be baked. This may be useful if you don't need to bake current animation for all characters.

Note: should remember that each individual option takes effect only when disabled respective "for all" main menu option. For example custom recording time for some animation will take effect only if "Record full length for all" flag of main menu is not set; custom baking options for some animation will take effect only if "Use common baking properties" flag of main menu is not set, etc.
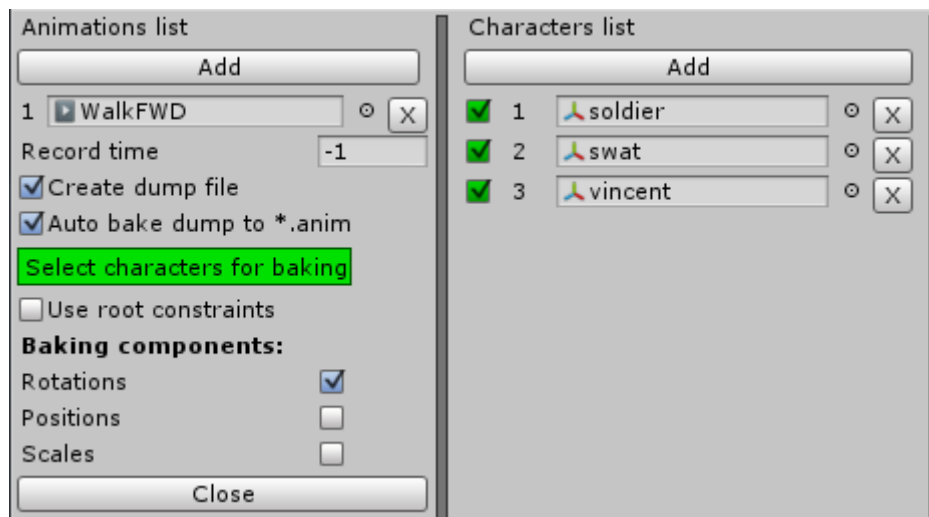
Settings

In menu "Settings" you can change paths for saving dump files, animation (*.anim) files and preferences. Preferences imply your current characters and animations lists, so if you saves preferences when closing Animation Baker window, then in next opening they will be loaded.