



Cryptic AR

Cryptic Studios, Inc.

Revision 2

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Installation

To install the Cryptic AR the user should first run the included install application (CrypticARSetup.exe). The installation program will ask for the directory to install the actual rig and support files in (usually the

user's "Program Files" folder) and then it will ask for the user's root 3D Studio Max directory. Once the installation has completed the rig files will be accessible through start menu or the directory specified earlier.

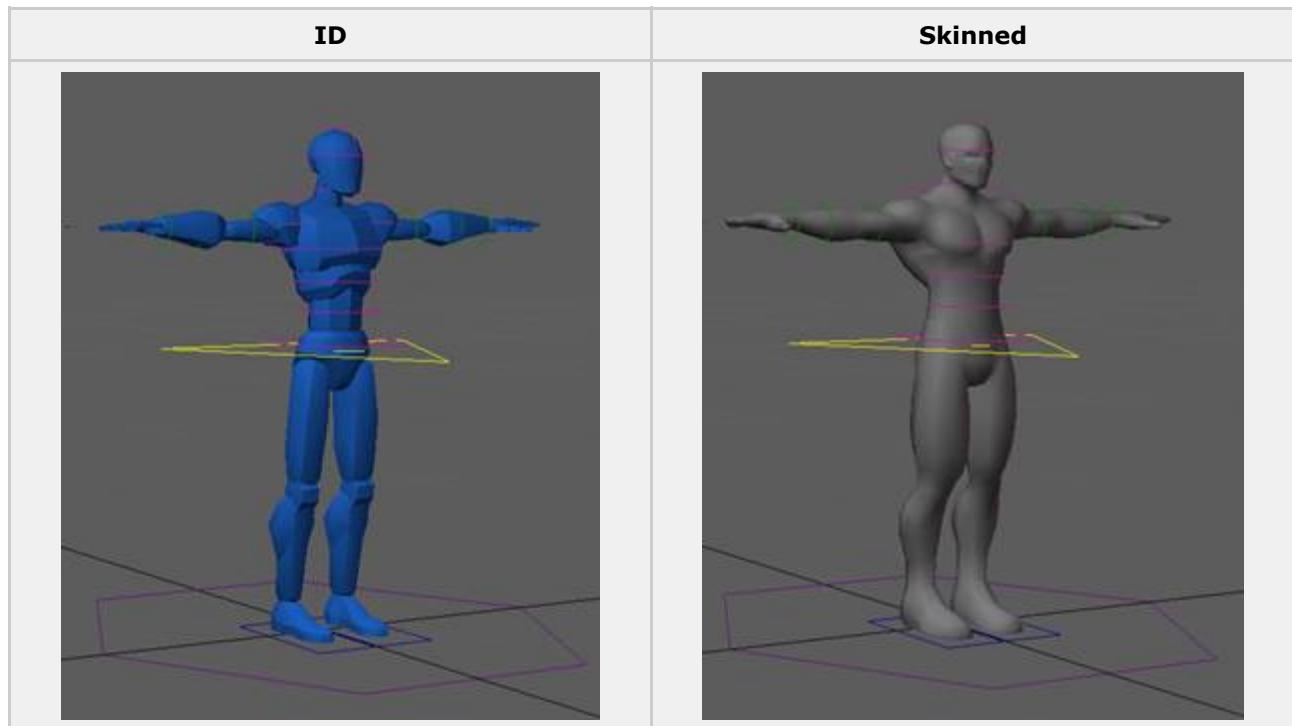
The final step to installation is to assigned the Cryptic AR Main Picker to a toolbar in the 3D Studio Max interface. To do this Max will need to be restarted after installation, if it was already running. Next the user should click select the "Customize User Interface..." option in the "Customize" menu at the top of thier screen. In the new window that opens, select the "Toolbars" tab. Finally, select "Cryptic" in the dropdown menu labeled "Category" and drag the action "Cryptic AR - Picker" from the list to one of the available toolbars. The Cryptic AR Picker may now be launched by clicking the newly created button on the toolbar.

Note: The picker can only be launched if the Cryptic AR rig file is currently loaded in Max.

Display Modes

The Cryptic AR is the standard humanoid rig used for all Cryptic Studios projects. It is intended to be as powerful, flexible and easy to use as possible. It supports both IK and FK limbs (as well as smooth blending between the two), squash and stretch on individual limbs, the head and torso and advanced scaling support to allow quick animation prototyping for different character types.

While working with the Cryptic AR you have two primary types of display modes, ID (box) and skinned geometry. IDs are customizable skins that allow the user the freedom to create a specific characters for the animation needed.



Cryptic AR Picker

Both skinned and IDs, as well other advanced features of the Cryptic AR, are accessed through the Cryptic AR Picker, **Figure 1**.

To load the Picker the user must either use the custom key-binding, or click the toolbar button labeled Cryptic AR that they previously setup. To change between display modes simply use the dropdown menu in the lower left hand corner of the picker. Users may also toggle between frozen and unfrozen state by using the button just below the display mode dropdown.

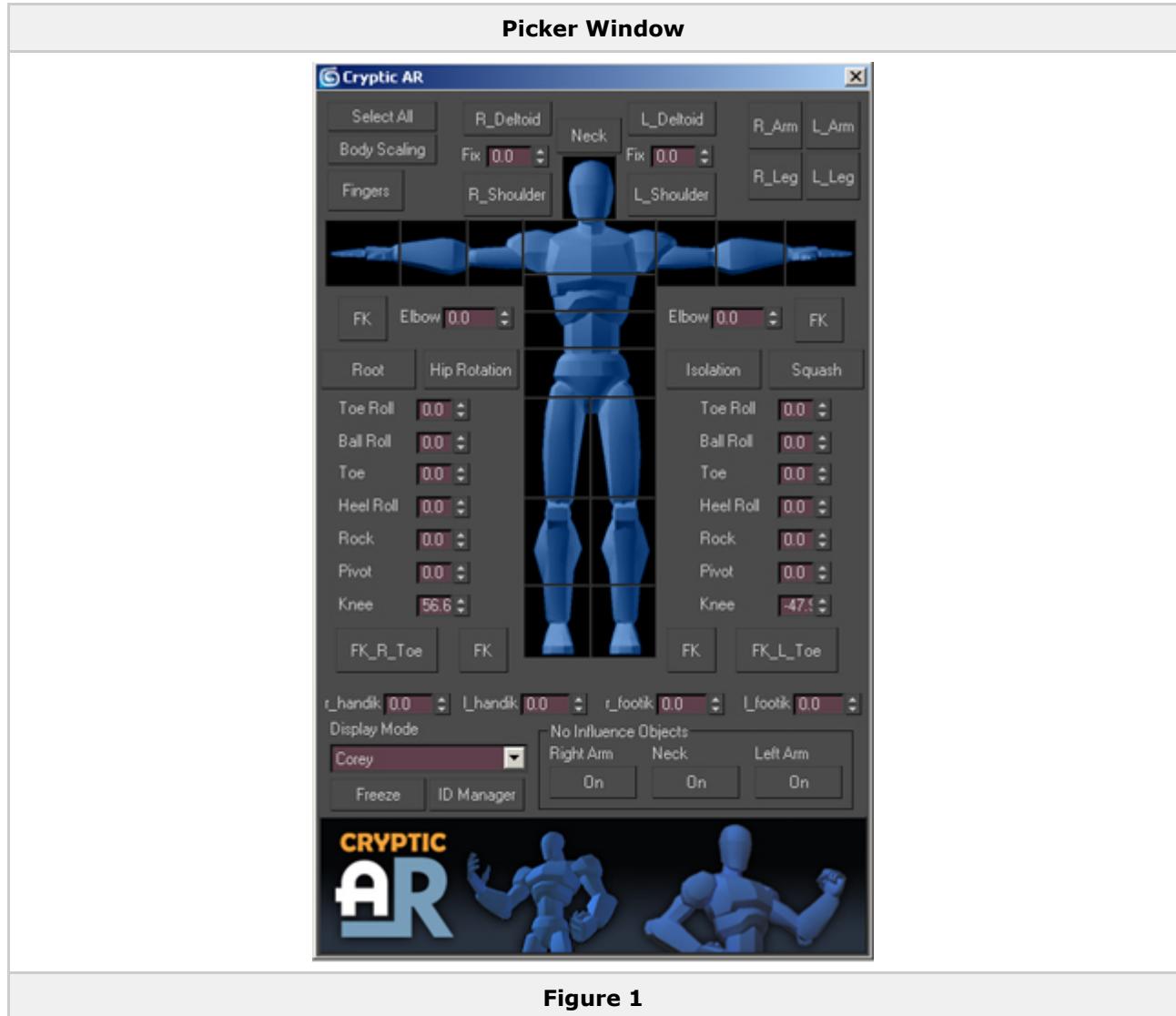


Figure 1

Selecting Objects

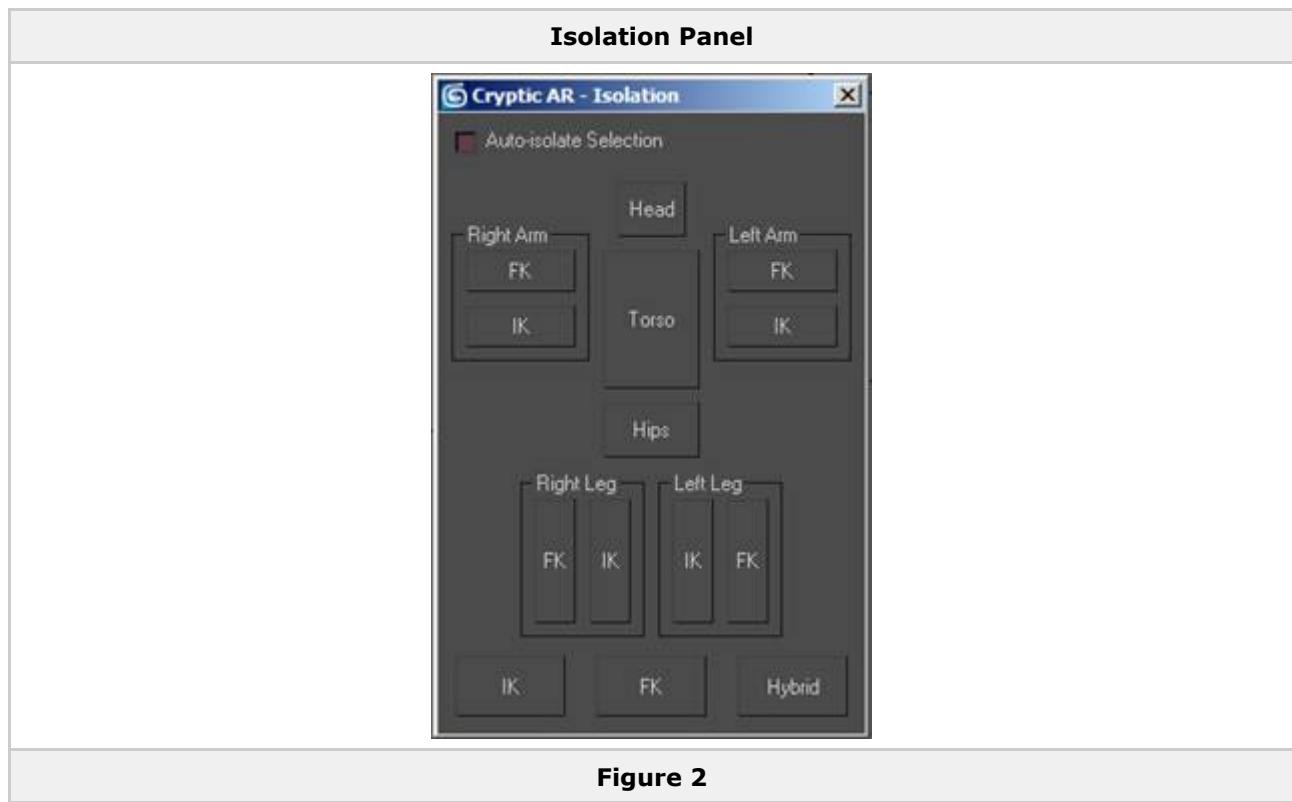
In the Picker, **Figure 1**, there are a variety of buttons that allow the user to select objects for manipulation or key-framing. The most simple and common method of selecting an object is by clicking the button that corresponds to the object the user wants to select. For primary controls, the user should click the image of the body part they wish to select in the Picker. The user will need to use button selection for the body parts that do not have a visual representation within the Picker, (Deltoids, Shoulders, Neck, Hip Rotation and FK Toes).

The less obvious section buttons are as follows:

- R_Arm/L_Arm/R_Leg/L_Leg:
 - These four buttons, found in the upper right of the script window, will always link to the IK control for the respective limb. This is important, as parameters such as IK Blend percentage and squash/stretch are always stored internally on the IK control of that limb, so even though the user may be in FK mode, they may need to set a key on the IK control. These buttons provide for those contingencies.
- Hip Rotation:
 - This is a secondary hip control used for only rotation. It is independent of the torso, and thus can be used to animate weight transference in the hip without affecting the rest of the animation.
- Root:
 - This is the global root of the character. It is generally not used, except to counter-animate global translation to keep a character at the origin (in cases where you've globally moved the character during an animation, such as a lunging attack).

The user may also select groups of items. The simplest way to do this is by holding CTRL while clicking any selection button on the Picker. Doing so will add the object to your current selection, instead of clearing your selection first. There is also a "Select All" button in the upper left which will select all keyable nodes in the rig.

Another method for selecting multiple objects at the same time is the Isolation Panel, **Figure 2**. It can be accessed using the button to the right of the hips, and looks like the image below:



The Isolation Panel can be used to select any of the shown groups with one click, the hips containing both the Hip itself, and the Hip Rotation object, the Head containing both Head and Neck, etc... If these objects are hidden it will automatically show them. In addition, by checking the "Auto-isolate Selection" box, the script will hide all the other controls, allowing you to focus on animating one part of the rig at a time. At the bottom of the Isolation panel are three buttons to show and select the controls used in a full IK, FK and Hybrid (IK Legs, FK Arms) rig.

IK/FK Modes

The default rig-state is the Hybrid mode (IK Legs, FK Arms). This can be altered on a per-limb basis to suit the users needs. Next to each limb there is a square button labeled either IK or FK, depending on the mode that limb is currently in. By clicking this button the mode will be toggled for that limb. If the user toggles these settings (using either method) without either "Set Key" or "Auto Key" mode enabled, it will toggle them for the entire animation. This may be desired, but if not, the user can easily resync their animation by returning to the first frame they animated on, turning off "Set Key" and "Auto Key", and resetting the limbs to the mode they were in when they started.

If the user does plan on using multiple kinematic modes per limb in a single animation, they may want to use IK/FK blending. This is controlled using the four spinners below the three mode buttons. 0 = FK mode, 100 = IK mode. For the purposes of keying these attributes, they are stored on the IK control for their respective limb. Using this feature will allow them to smoothly blend between the IK and FK controls over a set number of frames.

IK Specific Controls

There are several controls that are specific to IK modes. These are the elbow spinners for the arms, and the foot/knee controls (a series of spinners to the left or right of the picker) for the legs. The elbow and knee spinners control the up-vector of the IK chain. The rest of the foot controls allow the user to control foot roll, pivot, rock and other aspects of the IK foot. Like with the blend controls, the actual parameters are stored on the related IK control object.

Note: The foot controls only affect the IK foot. When in FK mode the user will have to manually rotate the ankle and toe using the provided control handles.

No-Influence Objects

The No-Influence toggles, at the bottom of the Picker (**Figure 1**) may be a bit unfamiliar, but are useful in certain situations. They are relevant to the FK version of the limbs only. Essentially, when toggled "On" the limb will not inherit rotation from the rest of the body, instead inheriting its rotation from the global root. This can help in situations like knock backs, allowing the user to animate the arms independently of the torso. Whether or not they should be used is largely up to animator preference. The user must remember that if they import an animation designed with, for example, the NI Arms off, and they leave them turned on, the rotation of the arms will be offset substantially. Basically, if the user imports an animation and one of these limbs looks wrong, they should try toggling the respective NI object with Set and Auto Key turned off, and see if that helps.

Squash and Stretch

Squash and stretch is supported on the head and neck, the torso, and each limb (both IK and FK). To access these features, the user will click the "Squash" button on the right edge of the picker, just above the IK Foot controls. This will open a new panel with a series of buttons and spinners, as shown below:

Squash and Stretch Controls



Figure 3

Sliding the spinner between -100 and 100 will either squash or stretch the indicated nodes. The squash and stretch that occurs automatically maintains volume, which is currently the only method of squash and stretch available. To key the squash or stretch, either use the "Auto Key" method, or if using "Set Key", click the button above the spinner you wish to key, as this will automatically select the object on which the parameters are stored.

Finger Interface

The Cryptic AR also contains an advanced set of finger controls with support for user modifiable pose lists. To call up the finger control panel, **Figure 4**, click the "Fingers" button near the upper left of the Picker.

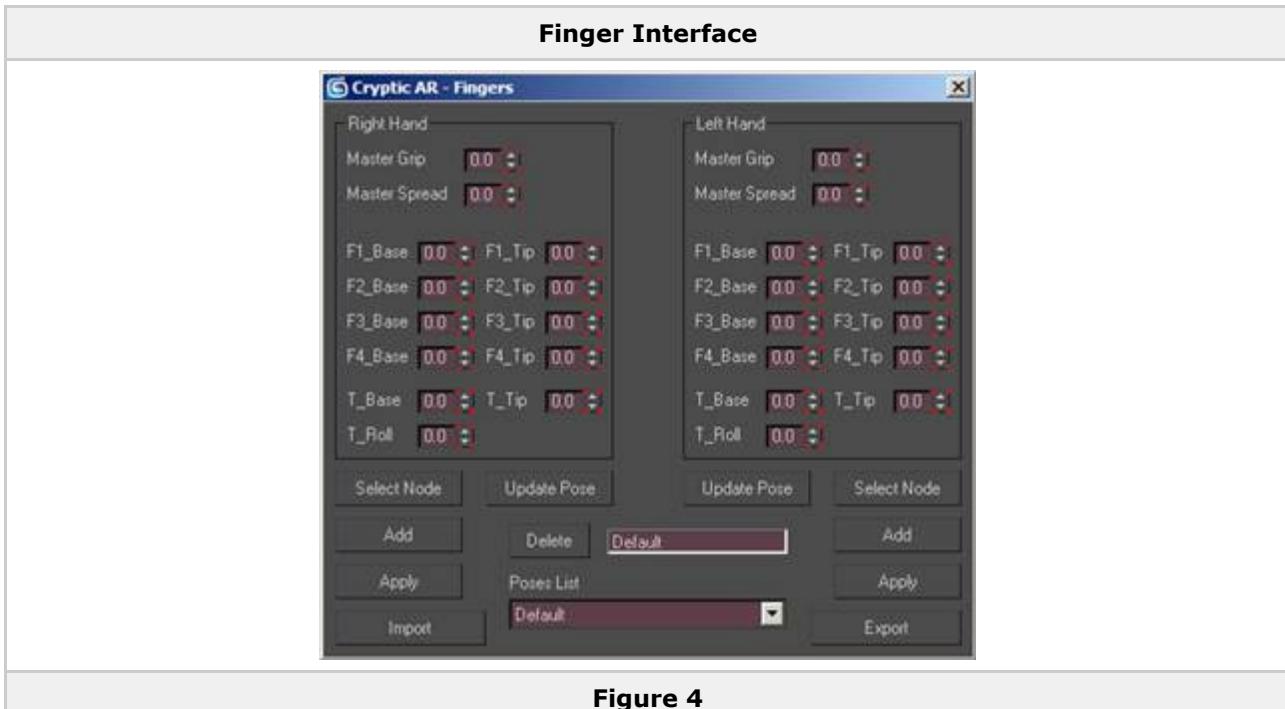


Figure 4

The controls are broken up into right and left hand spinners, with a list of saved poses in the middle. The top two spinners ("Master Grip" and "Master Spread") control all the fingers of that hand at once. To select the node that stores these parameters, for keying purposes, the user should use the corresponding "Select Node" button below that hand's set of controls.

The user can use the poses found in the "Pose List" to apply pre-set finger positions to either hand. To do so, they need to select the pose from the drop-down menu, and then click "Apply" for the hand they want to apply the pose to. Poses are hand-independent, so a pose made on the right hand can be applied to the left hand. To store a user created pose, the pose needs to be named in the text field in the middle of the panel, then the "Add" button should be selected under whichever hand the user wishes to base the new pose on. To change an existing pose, it will need to be selected from the drop-down menu and then the "Update" button should be selected under the hand the user wants to base the updated pose on. To remove a pose from the list, the pose needs to be selected in the dropdown and the "Delete" button should be clicked. Finally, you can export or import custom pose lists from one file to another using the provided buttons.

Scaling Interface

The Cryptic AR also contains a Body Scaling Interface with for testing animations on characters of varying proportions, or quickly prototyping animations for different character types. To call up the Body Scaling Interface, **Figure 5**, click the "Body Scaling" button near the upper left of the Picker.



Figure 5

The controls for scale are relatively simple. The sliders will either increase or decrease the labeled attribute. The easiest way to see their effect is to enable the skinned display mode and then adjust the different sliders to get a feel. There is a drop-down menu for user definable presets on the right, as well as controls to allow you to manage that list (similar in function to the finger pose list detailed in the previous section) and a "Reset" button to set all the sliders back to neutral.

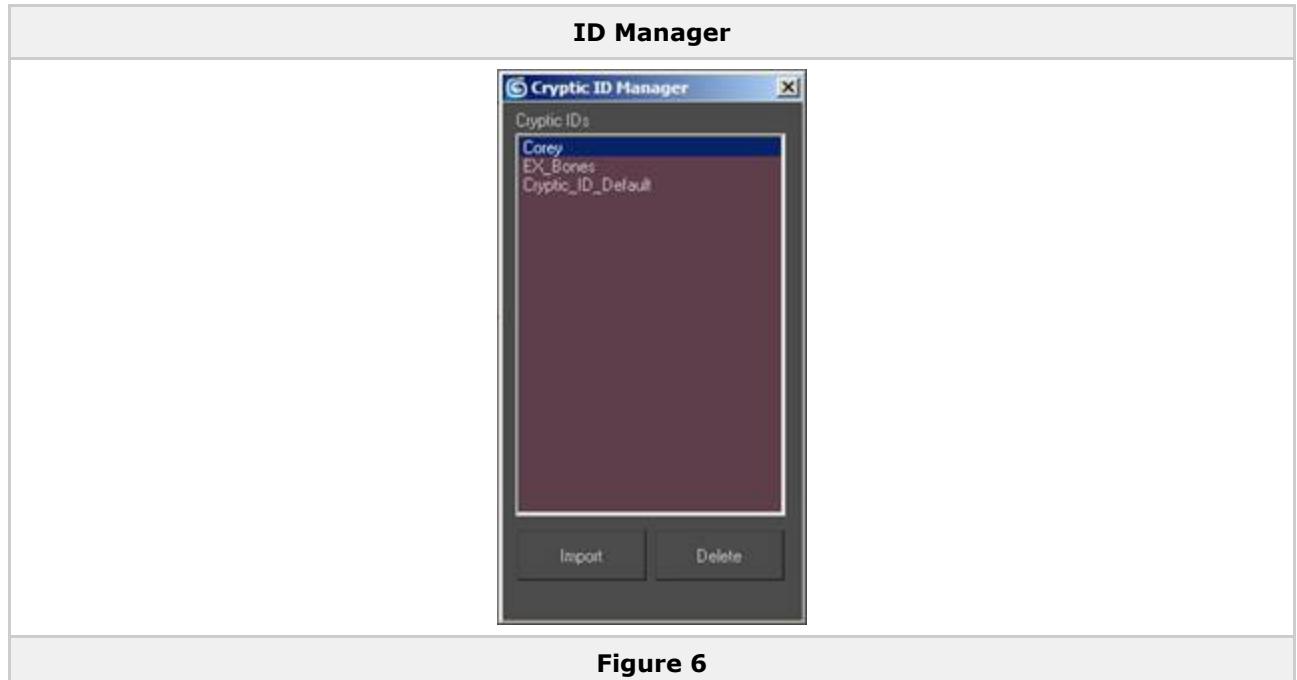
Note: Remember, any scale applied at export time will be exported with the animation. To be safe, scales should be reset to neutral before export, unless the user is intentionally including scale with the animation. It is also theoretically possible to set keys on these parameters (which are stored in the character's "Root" node to get animated scale effects.

Cryptic AR IDs

The Cryptic AR also contains a feature of the Cryptic AR is the customizable Cryptic IDs. They are simplified, segmented characters that work well with body scaling and allow the rig to easily change looks to fit the animation you're working on. To call up the ID Manager Interface, **Figure 7**, click the "ID Manager" button near the lower left of the Picker.

All currently loaded IDs will be visible in the dropdown list on the main picker's lower left corner. There are two special IDs that can't be removed or altered. The first ID is "Corey". This is the smooth skinned humanoid mesh used to show mesh deformation.

The second special ID is the "EX_Bones" ID. This is a visual representation of the actual export bones (minus automated twist and fan-bones). Users can import or delete IDs using the ID Manager.



To delete an ID, its name should be selected in the list and then the "Delete" button clicked. To import a new ID, the "Import" button should be clicked and then a Cryptic ID template max file should be selected. If there are any duplicate geometry names the user will be presented with the standard 3D Studio Max duplicate name resolution dialog. The suggest solution is to rename duplicate geometry, as some of the scripts are name dependant and duplicate names can cause errors.

To create a new ID, the user should use the provided "Cryptic AR - ID Template" max file. The file looks like the following image:

ID Template File

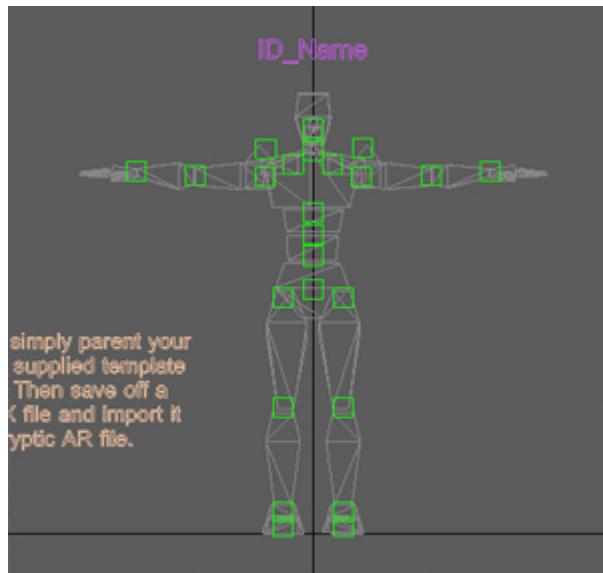


Figure 7

All the user needs to do is create your geometry using the frozen box geometry in the background as a guide, and then parent their geometry to the appropriate green template object. Finally, they need to change the text of the "ID_Name" text object to be the name of your new ID and save off a copy. It is now ready to be imported into the main Cryptic AR file as detailed above.

Multiple Rigs in a Scene

At this time multiple rigs in a scene is not supported. While the rig itself can coexist with duplicates of itself in a single scene, the scripts that accompany it will only work with one instance of the rig at a time. While all the controls exposed in the scripts are present as parameters on the various control handles, due to the potential difficulties of working with more than one instance of the rig in a scene file we cannot support it at this time. With a little digging and ingenuity, you can probably get it to work; we just aren't making any promises.

