

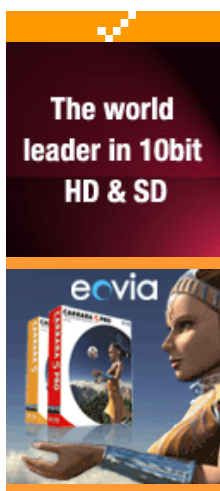


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Mocca tutorial Part Two:

We'll start with the end of the Mime Leg tutorial and use the file "MimeLegFinal.c4d" from the Tutorials that came with Cinema 4D R8. If you haven't gone through the tutorial "Advanced 1 Setting Up the Leg" in the Mocca manual, you should do so before continuing here.

Load the "MimeLegFinal.c4d" file. I'll go through the steps to get the left leg set up then you'll just need to duplicate the steps for the right leg.

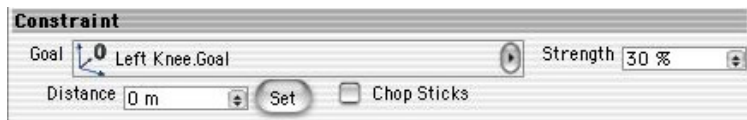
First, select the Soft IK tag for the Left Thigh bone and set the rotation Strength to 30%.



Then select the Soft IK tag for the Left Shin bone and set the rotation Strength to 40%:



Then on the Constraint page, set the Left Knee.Goal Strength to 30%



Now, in the Object Manager, drag the Left Knee Goal into the Left Foot Controller.

Next, we're going to rebuild a complex Foot Controller that will give you more control of the entire leg rig. To make things a little easier later on, let's rename a couple of elements.

1. Rename the "+" bone to "Left Heel"
2. Rename the "Left Foot Controller" to "Left Toes.Root Goal"

Select the Left Toes bone and use the menu *Plugins > Mocca > Add UpVector* or click on the icon in the Mocca tool pallet.

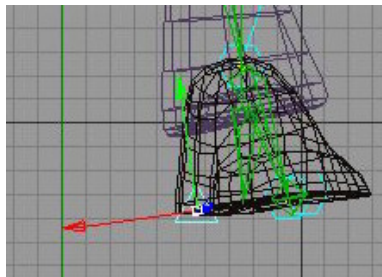
This will create an upvector named Left Toes.Up. Drag this into the Left Toes.Root Goal (formerly known as the "Left Foot Controller").

With the Left Toes.Up selected, use the menu *Functions > Transfer*, type in Left Toes, enable Position and Rotation and click OK.

Select the Left Toes Soft IK tag and in the Attributes Manager on the Constraint Page Set the Up Vector Strength to 100% and select the +X axis.



Now select the Left Toes.Up and pull it just outside the foot using its red X axis arrow.



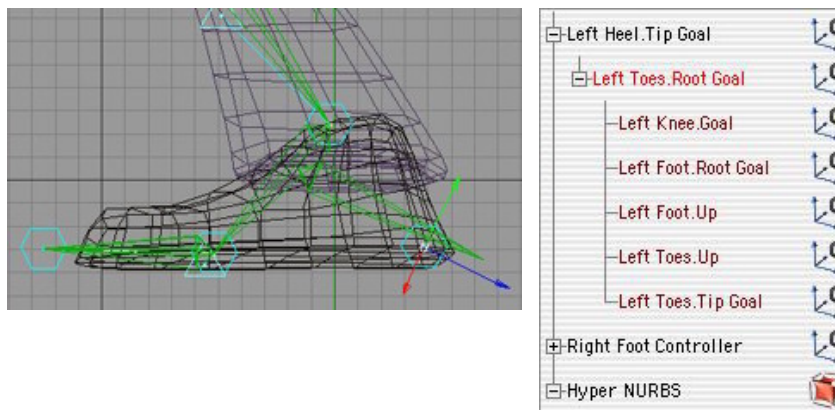
Now select the Left Heel bone and use Add Tip Goal.

Delete the object "Left Heel.Tip Effector" because we don't want any forces to affect the Left Heel Bone. We just needed the Left Heel.Tip Goal object to use for calculating the position of the foot's heel in the expression we'll create later on.



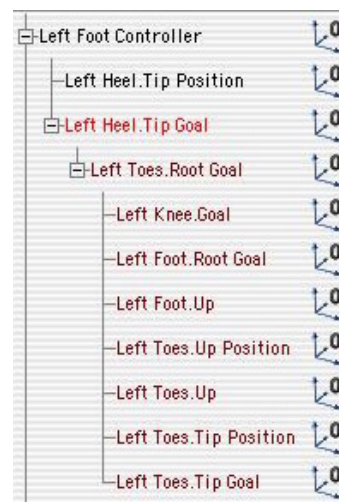
Position the Left Heel.Tip Goal just inside the foot as shown below.

In the Object Manager, drag the Left Heel.Tip Goal up above the Left Toes.Root Goal, then drag the Left Toes.Root Goal inside the Left Heel.Tip Goal



We now need a few null objects for positioning.

1. Create a null object and rename it to "Left Toes.Tip Position", then use *Functions > Transfer* and type in Left Toes.Tip Goal. With the Left Toes.Tip Position still selected, in the Attributes Manager, on the Basic page, change the Use Color pop up menu to "Always" and change the Display Color to Yellow (or something other than a light blue). Then on the Object page change the Display pop up menu to "Hexagon". Now, in the Object Manager, drag the Left Toes.Tip Position into the Left Toes.Root Goal.
2. Create a null object and rename it to "Left Toes.Up Position", then use *Functions > Transfer* and type in Left Toes.Up. With the Left Toes.Up Position still selected, in the Attributes Manager, on the Basic page, change the Use Color pop up menu to "Always" and change the Display Color to Yellow. Then on the Object page change the Display pop up menu to "Triangle". Now, in the Object Manager, drag the Left Toes.Up Position into the Left Toes.Root Goal.
3. Create a null object and rename it to "Left Foot Controller".then use *Functions > Transfer* and type in Left Toes.Root Goal. With the Left Foot Controller still selected, in the Attributes Manager, on the Basic page, change the Use Color pop up menu to "Always" and change the Display Color to Yellow. Then on the Object page change the Display pop up menu to "Cube". Set the Radius to 20 and the Orientation to XZ.
4. Create a null object and rename it to "Left Heel.Tip Position", then use *Functions > Transfer* and type in Left Heel.Tip Goal. With the Left Heel.Tip Position still selected, in the Attributes Manager, on the Basic page, change the Use Color pop up menu to "Always" and change the Display Color to Yellow. Then on the Object page change the Display pop up menu to "Hexagon". Now, in the Object Manager, drag the Left Heel.Tip Position into the Left Foot Controller.



OK. Now drag the Left Heel.Tip Goal into the Left Foot Controller so that the hierarchy looks like the image to the right.

Next, create a null object and rename it to "Left Thigh.Position", then use *Function > Transfer* and type in Left Thigh.

With the Left Thigh.Position still selected, in the Attributes Manager, on the Basic page, change the Use Color pop up menu to "Always" and change the Display Color to Light Blue.

Then on the Object page change the Display pop up menu to "Circle". Set the Radius to 20 and the Orientation to ZY.

Now, in the Object Manager, drag the Left Thigh.Position into the Pelvis.

Now, select the Left Thigh and use *Add UpVector* from the *Plugins > Mocca* menu. Use *Function > Transfer* and type in Left Thigh, enable Position and Rotation and click OK.

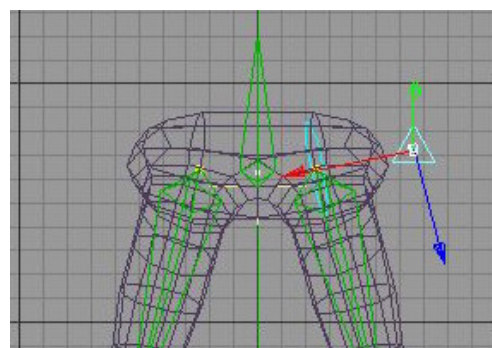
Select the Left Thigh Soft IK tag and in the Attributes Manager on the Constraint Page Set the Up Vector Strength to 100% and select the -X axis.



Now select the Left Thigh.Up and pull it just outside the hips using its red X axis arrow. We'll leave the Left Thigh.Up where it is in the hierarchy for now.

And finally, create a Polygon object and name it "Left Foot Floor", then use *Function > Transfer* and type in Left Foot Controller, but this time disable the Rotation so that we only match the position of the Left Foot Controller.

Now, we've got all the controller objects created and in their proper position so it's time to start on the XPresso expressions.



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