MotionBuilder: Basic Workflow – V1

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In Motion Builder:

(select Maya controls when launching the software, so that you will be in a familiar context of camera controls.)

1. **File/Motion File Import** your exported .c3d file from Vicon Blade v1.7.

   Deselect "New take (new)" from the option box and select **Import**.

2. It is common that your data will import upside down. Select the sphere at the base of the .c3d point cloud that imports. This is a manipulator for the entire cloud. Rotate and translate this cloud so the data is facing forward down the positive Z-axis. To get the orientation precise, you can double-click on the X, Y, and Z regions at the bottom of the viewer pane and manually enter rotation values, with the spherical manipulator still selected.
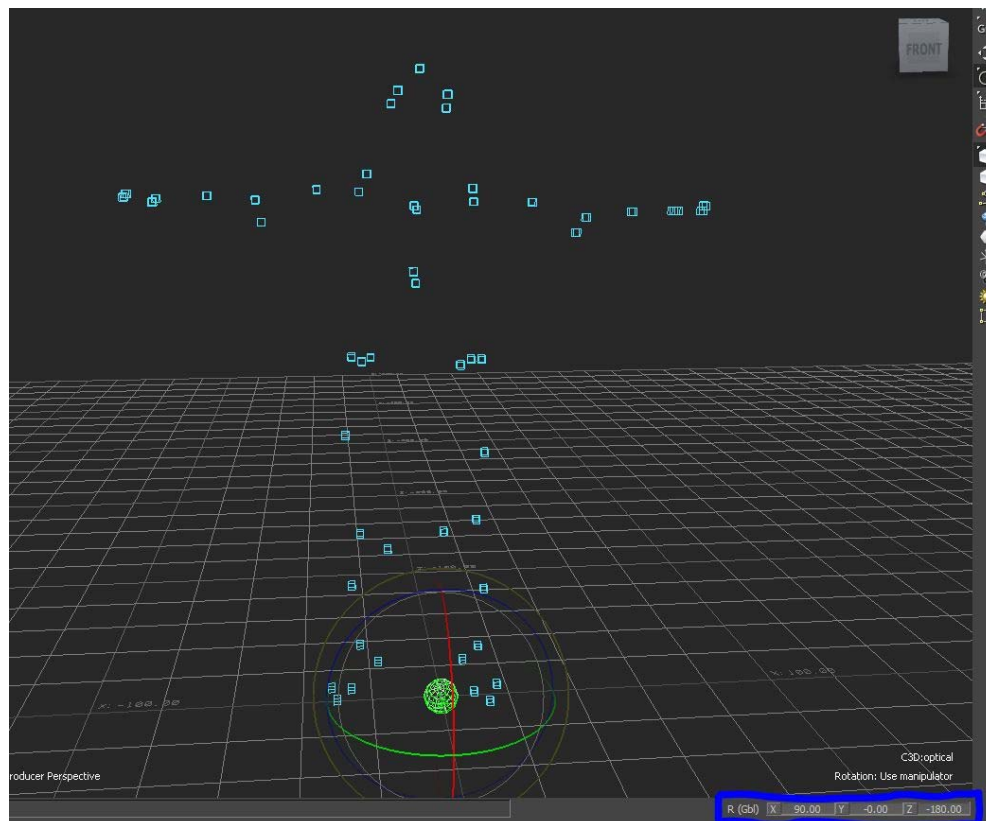
3. Next, drag an **Actor** into the scene from the **Asset Browser**.

This creates a "dummy actor' that will be used to initially set your motion capture data. It provides a great way to test your data and see it controlling a character. This dummy will be trashed before assigning your actual model to the scene.
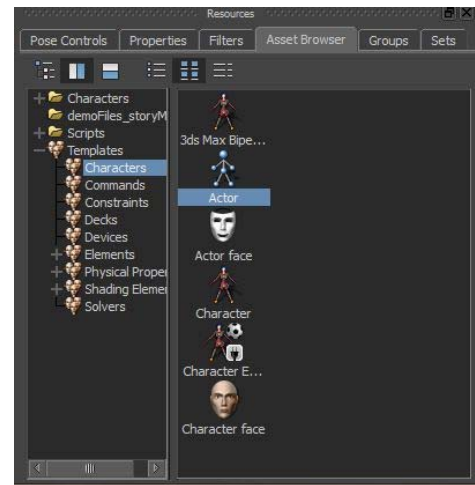
4. **Uniformally** move and scale the .c3d cloud to the approximate size of the dummy actor.

Do this by selecting the spherical manipulator at the bottom of the cloud. Use the hips as a point of reference, and use the scaling tool to match the height of the point cloud to the dummy actor, as best you can.

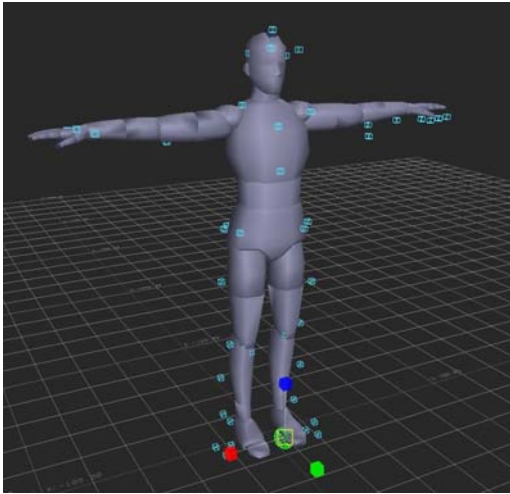5. Now, **Scale** the dummy actor to fit into the point cloud.

Give the dummy ample volume to fill the space, taking care to not hide any of the .c3d markers inside the of it.

You will also need to position the arms and legs of the dummy into the exact positions of the T-pose of the .c3d cloud. Select the arms at the shoulder joint, and the legs at the top of the thigh to rotate and scale. Remember, these portions of the body are linked together much like a bone chain on a rig - moving the parent moves all of its children.

> **NOTE**: Try not to Move too much in this step. Using the Move tool, versus the Scale and Rotate tools, tends to break your dummy apart once you have it moving with the data, and this is often a hard mistake to correct.

Remember to view your dummy from all angles to ensure that you're matching the size appropriately. This is probably the most time consuming part of this process, so take your time and be as precise as you can.

Dummy Before Sizing	Dummy After Sizing
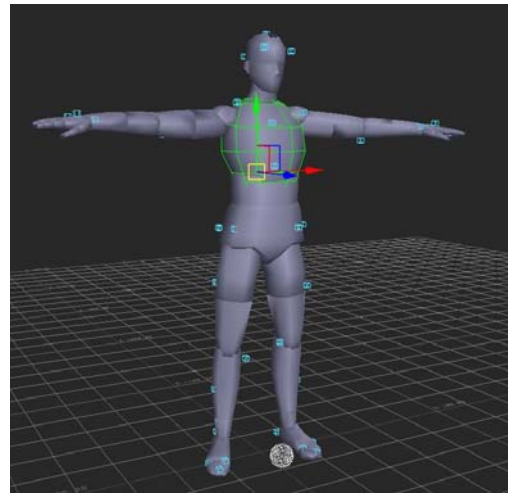
Once you have your dummy sized up to your liking, go ahead and **Save** a version of your MotionBuilder session. It is advised to save at the end of each major step during this process, seeing as how some actions cannot be undone. This document will suggest appropriate times to save a version of your session.

6. Next, double-click on your Actor in the Navigation tab of the Navigator and select **MarkerSet...** and **Create**.
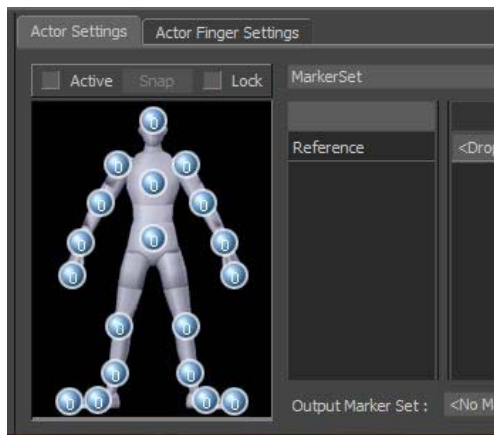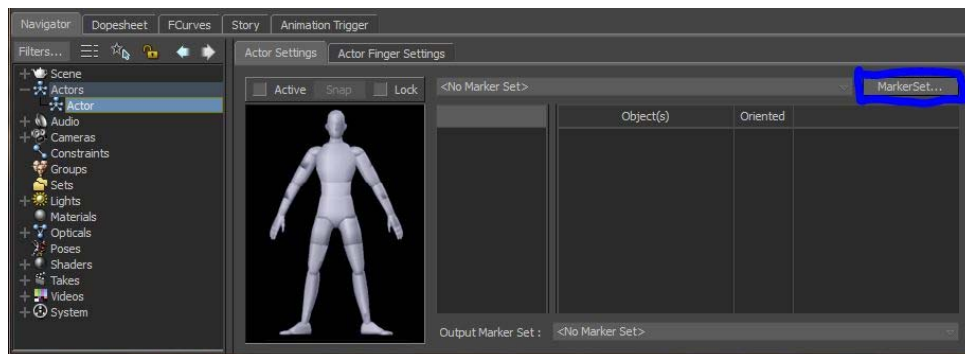

There should now be an Actor Settings tab in your Navigator and a window that shows regions where you will be assigning your markers.

7. Now, select markers, and while holding down **X, left-click drag and drop** them into the regions on the Actor Settings tab.

You can assign more than **5** markers to a single region, so at the hips, select and assign any 5 to the corresponding hip region.

If you happen assign the wrong marker to a region, simply select it in the **Object** portion of the **Actor Settings** tab and Delete it. You can then re-assign it appropriately.

With practice, you will be able to quickly assign the markers to their appropriate places. Use the image to the right as a guideline, noting that the markers on the arms that are between the shoulders, elbows, and wrists, and the markers on the legs that are between the hips, knees, and ankles are assigned to whichever regions they are closest to (assign the mid-thigh markers to the knee regions).
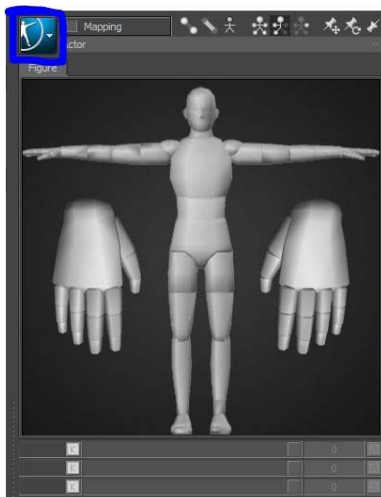
NOTE: To make the markers easier to see in the Viewer, select the blue menu in the **Actor Controls** tab of the Character Tools pane and **Deselect Actor(All)** in the **Show/Hide** menu.

Select Active on the Actor Settings tab, and your dummy will move with the .c3d data.

Save a version of your session before continuing.

8. With **Actor(All) still Deselected** in the Show/Hide menu of the Actor Controls tab of the Character Tools pane, drag and drop (Selecting **Merge/All Takes**) either a tutorial character from the **Asset Browser**, or **File/Merge** your rigged character into the scene.

9. In the Navigator, double-click on the the character that you have added to the scene, select **Actor** in the **Input Type** menu and select **Active**. Your character should snap to the skeleton of the .c3d data.
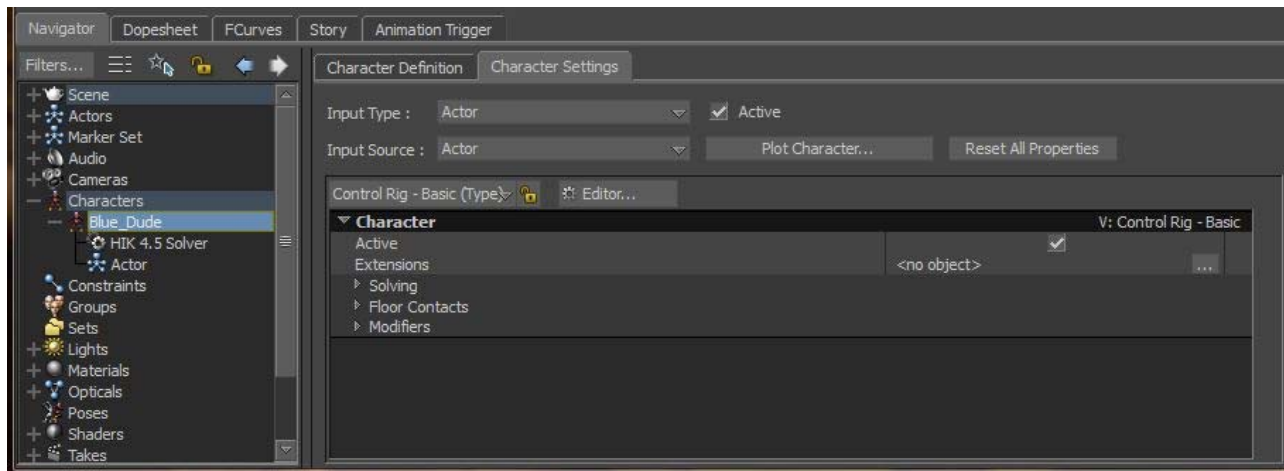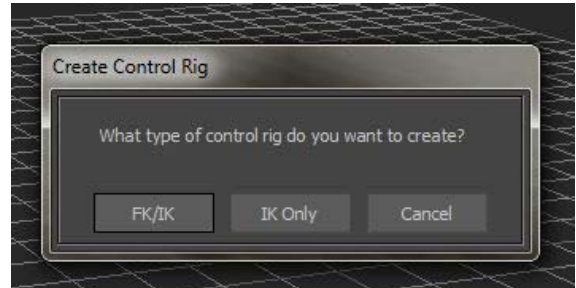

Play your take to make sure your character moves accordingly. If nothing happens when you play, make sure you are on the correct take (check beneath the Viewer pane).

10. Select **Plot Character**... twice in the **Character Settings** tab.

First, select **Skeleton / Plot**. Then select **Control Rig / FK/IK / Plot**.

11. Lastly, **Save** as an .fbx, and then import into the 3D package of your choosing.