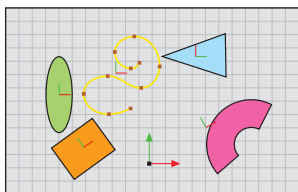


Aligner



Aligner does much more than just align objects. It adds much, much power to the (wrongly named) Center function. First, its non-modal, meaning that it can remain floating while in use and can even be docked anywhere in the layout. It also works with multiple selected objects, not requiring that they must be placed inside a Null or any other object, even though it can also work using a Null container. Aligner works with all objects. All types of geometry are considered (see last note) and even objects without geometry can be used. For objects without geometry (Nulls, Lights, Deformers, etc) only their axis will be considered. A thorough explanation of what each option does will follow. It will only be explained for the X axis but everything applies equally to the Y axis and to the Z axis. For all examples this set of six objects will be used:



A sphere, a rotated cube, a spline, a Null, a rotated cone and a deformed cylinder.

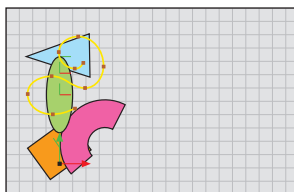
They don't need to be placed inside a Null. To work with them, they just need to be selected. But, if they are inside a Null (or any other object), just select that parent and turn on the Use Group option. Always check if this option is on or off as it can make Aligner seem not to be working properly. Aligner is also smart enough to only turn on the options that are relevant for each mode.

None - selecting this option will prevent the objects from moving in the correspondent axis.

Align

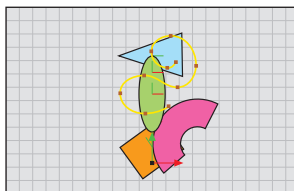
Align - If there is an object name (typed or dragged from the Object Manager) in the To field (on the bottom of the window), the axis or bounds of this object will be used for all calculations. This way, a set of objects can be aligned to an object that is not part of the group. If the dragging of objects into the field doesn't seem to work make sure you are not trying to drag more than one object at once. Aligner will search for the first object with that name on the Object Manager. Make sure there is no object with a similar name on top of the list, otherwise, that other object will be used.

Align [Axis Min] - Moves all objects so that all their axis are aligned with the axis of the object that had the axis with the smaller value.



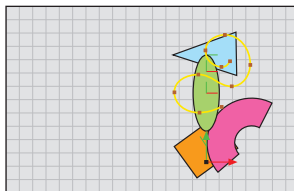
Align - Axis Min

Align [Axis Med] - Calculates the average position between the axis of the object with the axis with the smaller value and the axis of the object with the axis with the larger value. Then moves all objects so that all their axis are aligned with the calculated value.



Align - Axis Med

Align [Axis Max] - Moves all objects so that all their axis are aligned with the axis of the object that had the axis with the larger value.



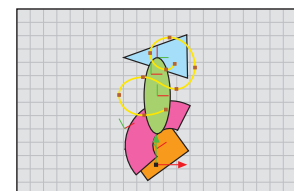
Align - Axis Max

Align [Bounds Min] - Calculates the coordinate of the vertex of the object that has the smaller value. Then, moves all objects so that the side of each object (that has the vertex with the smaller value) is aligned with the calculated value.



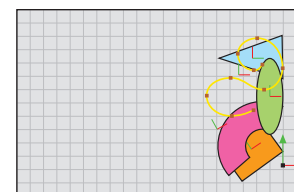
Align - Bounds Min

Align [Bounds Med] - Calculates the average coordinate inside every object, taking into account all the effective geometry. Then moves all object so that their geometrical center is aligned with average of the calculated coordinates.



Align - Bounds Med

Align [Bounds Max] - Calculates the coordinate of the vertex of the object that has the larger value. Then, moves all objects so that the side of each object (that has the vertex with the larger value) is aligned with the calculated value.

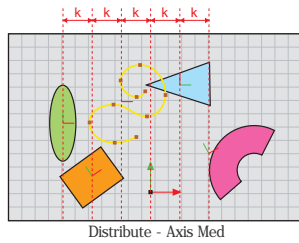


Align - Bounds Max

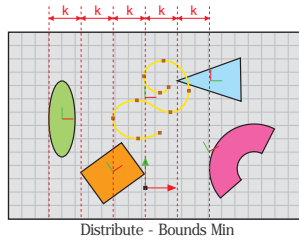
Distribute

Distribute - If any of the axis options is selected, the Axis Med option will be automatically set and Axis Min and Axis Max will be turned off. This is because all axis options would produce the same result when used in Distribute.

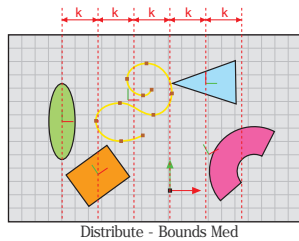
Distribute [Axis] - Distributes all objects so that all their axis are distributed evenly between the axis of the object that had the smaller coordinate and the axis of the object that had the larger coordinate.



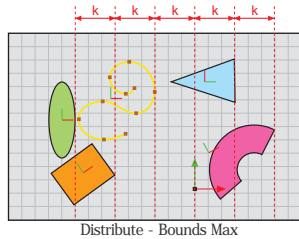
Distribute [Bounds Min] - Calculates the coordinate of the vertex of the object that has the smaller value, for all objects. Then, distributes all objects so that the calculated vertices (that have the smaller value) are distributed evenly.



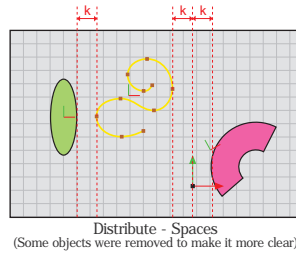
Distribute [Bounds Med] - Calculates the average coordinate inside every object, taking into account all the effective geometry. Then distributes all objects so that all their calculated geometrical centers are evenly distributed between the calculated center of the object that had the smaller coordinate and the calculated center of the object that had the larger coordinate.



Distribute [Bounds Max] - Calculates the coordinate of the vertex of the object that has the larger value, for all objects. Then, distributes all objects so that the calculated vertices (that have the larger value) are distributed evenly.



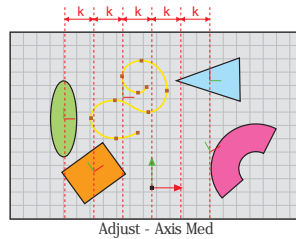
Distribute [Spaces] - Distributes all objects so that the space between them is always the same.



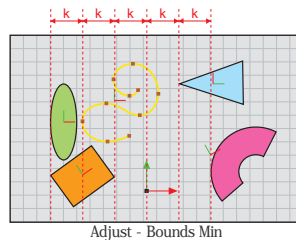
Adjust

Adjust - If any of the axis options is selected, the Axis Med option will be automatically set and Axis Min and Axis Max will be turned off. This is because all axis options would produce the same result when used in Adjust.

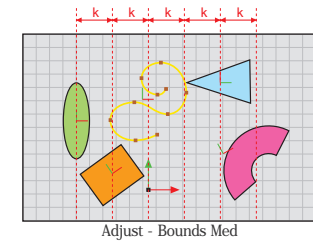
Adjust [Axis] - Calculates a grid between the coordinates of the axis of the extreme objects with a spacing that depends on the number of in-between objects (total number of objects minus two). Then adjusts all objects so that all their axis snap to the closest coordinate of that calculated grid.



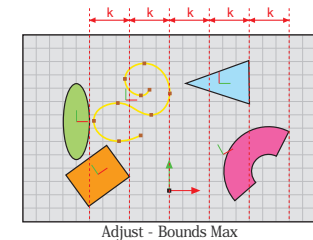
Adjust [Bounds Min] - Calculates a grid between the coordinates (of the vertices with the smaller value) of the extreme objects with a spacing that depends on the number of in-between objects (total number of objects minus two). Then adjusts all objects so that all their vertex with the smaller value snap to the closest coordinate of that calculated grid.



Adjust [Bounds Med] - Calculates a grid between the coordinates (of the geometrical center) of the extreme objects with a spacing that depends on the number of in-between objects (total number of objects minus two). Then adjusts all objects so that all their geometrical center snaps to the closest coordinate of that calculated grid.



Adjust [Bounds Max] - Calculates a grid between the coordinates (of the vertices with the larger value) of the extreme objects with a spacing that depends on the number of in-between objects (total number of objects minus two). Then adjusts all objects so that all their vertex with the larger value snap to the closest coordinate of that calculated grid.

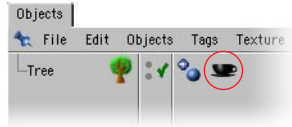


Use Group - Aligner works with the new multiple selection ability of release 8. This means that, to align several objects, one only has to select them and execute Aligner. But, if the Use Group option is on, Aligner will work like the Center function does, performing its operations on the elements that are inside the selected object (doesn't need to be a Null).

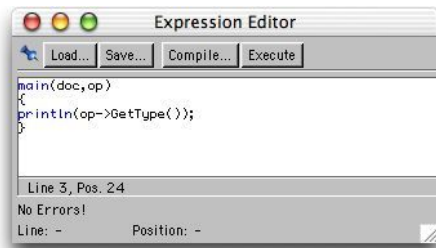
Note: Using custom geometry

In order to work its "magic", Aligner needs to know what objects create geometry and what don't. That would be easy if the only objects that create geometry were the ones that come standard with the application. But many independent developers create add-ons to Cinema4D. The new BetterBool object is one such example (already included). In order to assure that Aligner will always work with all objects, even the ones that may appear in the future, a list is

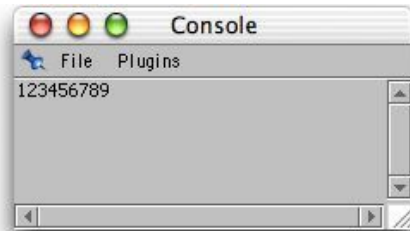
provided. That list can be edited to add more objects. And what objects should be included in the list? Each and every object that can be converted to geometry that can be edited in Point mode. Imagine you have a plug-in that generates trees. How would you add a “tree object” to the list? First, you need to know the internal ID of the object. To do so, add one “tree object” to the scene. Add it a COFFEE expression.



Double click the COFFEE expression tag and type the following code in the Expression Editor:



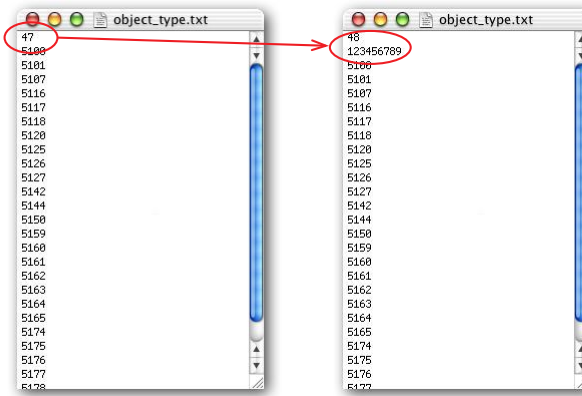
Now, just press Execute and open the Console. There should be a number there:



Take a note of that number. Now just open the file named “object_type.txt” in a text editor (its inside the Aligner plug-in folder):



The first number of the file is the number of object IDs that are on the list. Type the number you noted from the Console below this first number and add one to the first number.



Save the file. Make sure it is saved as a non-formatted text file. And that’s it. You need to restart Cinema4D or, at least, reload the plug-ins to make this change take effect.

About the plug...

This tool was made by Rui 'Mac' Batista, using COFFEE, the internal scripting language of Cinema4D. It was tested intensively by the author. It is not free from possible bugs, though. If you find any problem, look at the Console (shift+F10) for any error that may be reported there. Please contact the author (rui_mac@yahoo.com) and provide him as much information as possible. If you have any suggestions for additional options, feel free to send them to the author. No promise is made that it will be implemented but all suggestions will be considered.