Spline Simplifier

Simplifying splines is not a straightforward task in Cinema4D.

It is possible to optimize a spline but it has to be done by hand. Besides, doing it by hand will be an editing operation, so it will be "etched in stone".

Ideally, the simplification operation should be dynamic and parametric to allow for adjusting and fine-tuning.

That is exactly what the **Spline Simplifier** object does. It creates a simplified version of any spline, with less control points. But it also includes some additional features.

The **Spline Simplifier** is a generator. So, it will not alter the original spline. Instead, it will generate a new version of the spline. You can use the **Spline Simplifier** object wherever you could use a spline.

These are the parameters for **Spline Simplifier**:
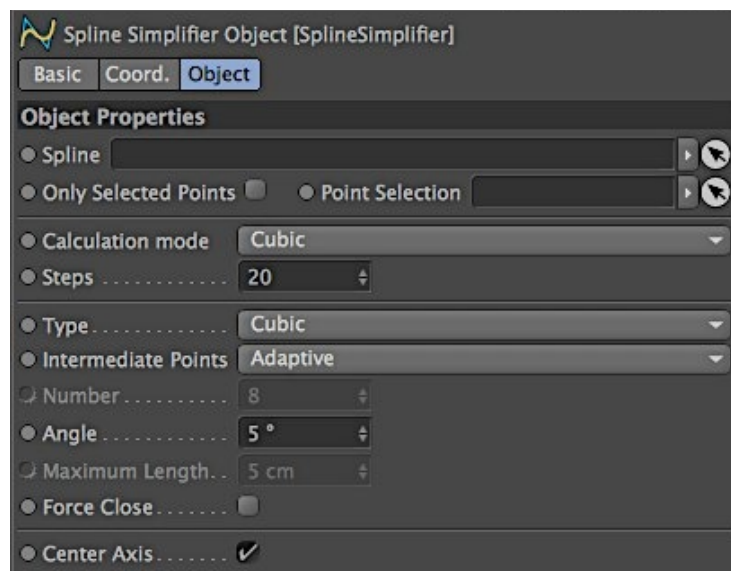
The **Spline** field is where you drag the spline that you want to simplify. You can also place the spline being simplified as a child of the **Spline Simplifier** object. Just use whatever method suits you best. Any spline can be used, even parametric spline objects.

If the **Only Selected Points** option is turned on, only the points of the spline that are selected will be simplified/smoothed. All the points that are sequentially selected will define a "virtual" segment that will be recalculated with the number of points set in the **Steps** option (see below).

The **Point Selection** field allows you to drag into it a point selection tag (created with **Set Selection**). It will work in the exact same way the "**Only Select Points**" option does, but instead of using a manual dynamic selection, it uses the selection set by a tag.

The **Calculation** mode sets the method that will be used to calculate the location of the newly created points.

The **Steps** parameter defines how many points the simplified spline will have. If there are selected points (and the **Only Selected Points** option is turned on) or if there is some point selection tag in the **Point Selection** field, each set of sequentially selected points will create a "virtual" segment and each of these segments will be calculated with the number of points set by the **Steps** parameter.

The **Type**, **Intermediate Points**, **Number**, **Angle** and **Maximum Length** parameters are similar to the parameters with the same names in any Cinema 4D spline. They allow you to define how the simplified spline will be created.

If the original spline is closed, the simplified spline will be closed also. If the original spline is opened, the simplified spline will be opened also. However, if you want to force the simplified spline to be closed, you can turn on the **Force Close** option.

The **Center Axis** option (on by default) will force the simplified spline to align precisely with the original spline, no matter where the **Spline Simplifier** object is or how it is oriented. Turning off this option will generate the simplified spline at the location (and orientation and scale) of the **Spline Simplifier** object. It will still be based on the relative location of the points of the original spline, but you can place and orient the **Spline Simplifier** object any way you want.