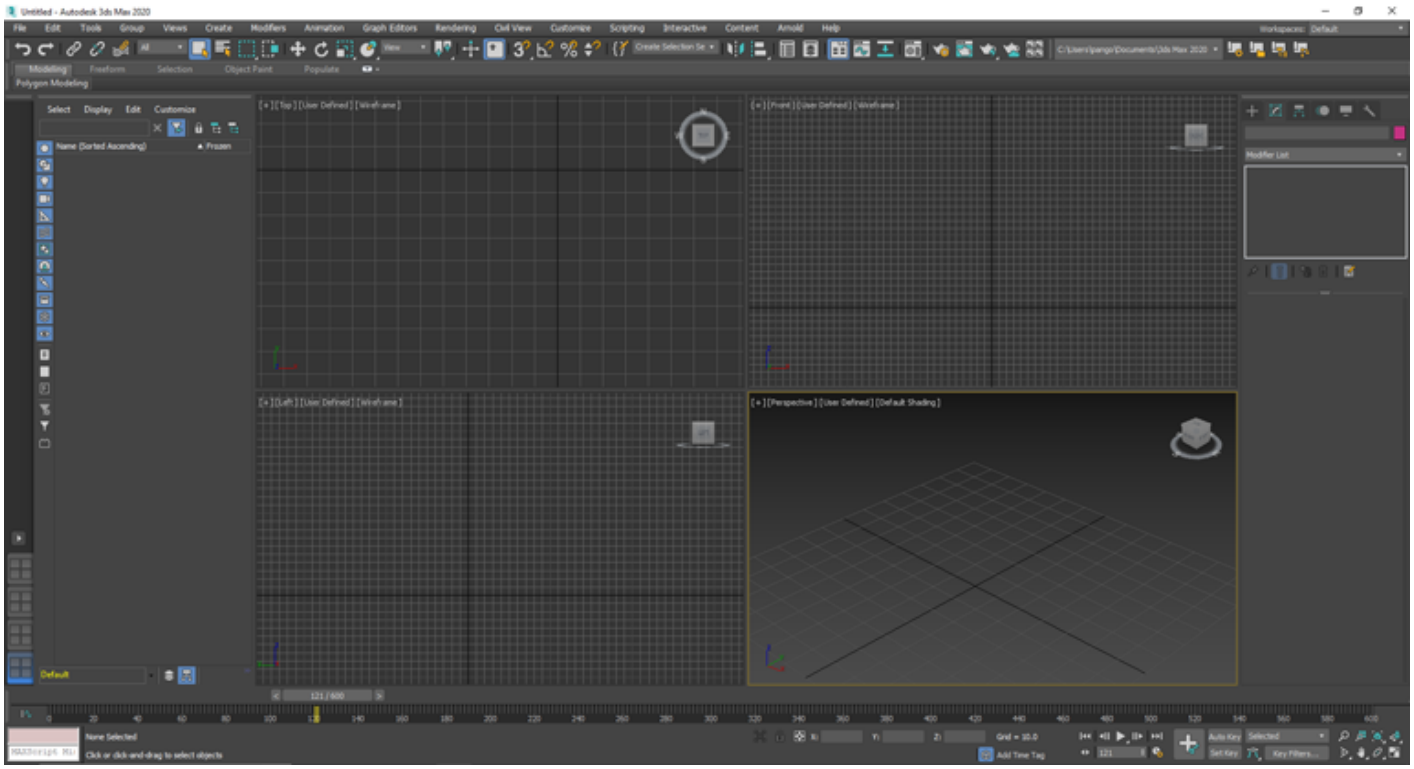
Renderer

Step 1: Selecting the renderer

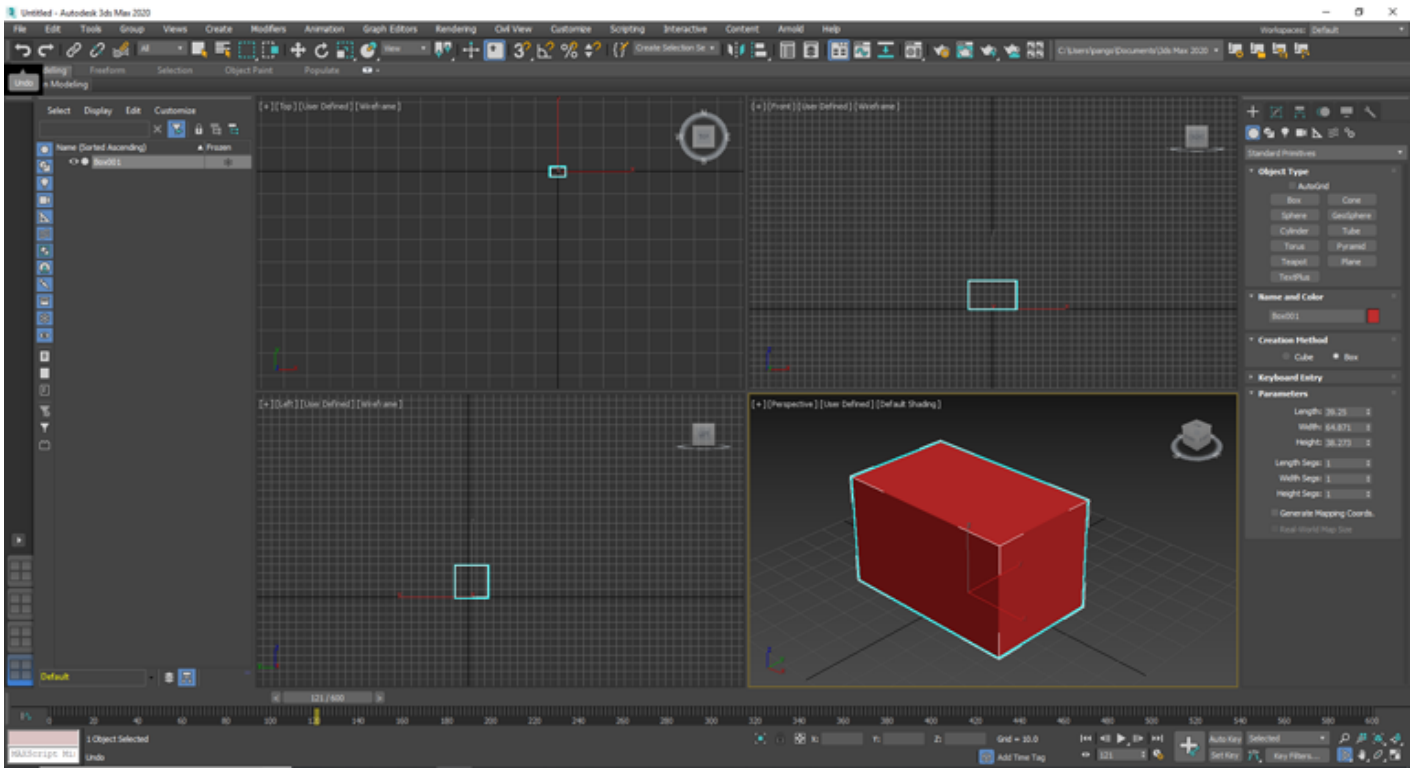
When you start 3ds Max, the initial screen looks something like this:



Let's create a simple cube and then render it to laser using Lasershow Converter MAX.

1. Select the **Box** button on the **Standard Primitives** section of the **Create** tab.
2. Draw a box in the **Perspective** view.
3. For added interest, rotate this box using the 3ds Max **Rotate** tool.

The result should look like this:

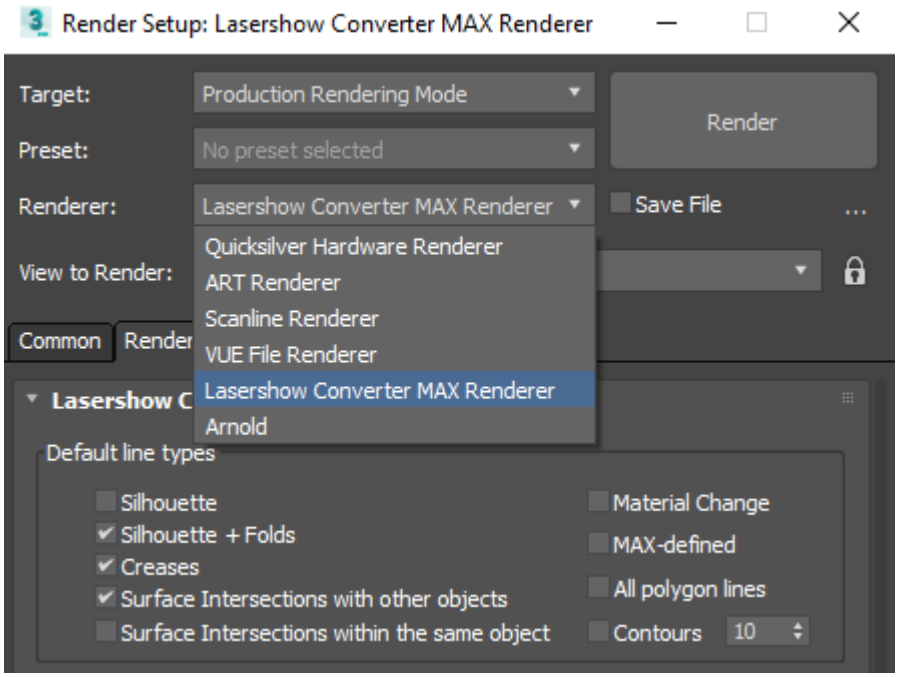


Select Lasershow Converter MAX as the renderer

To view this in laser light, the first thing you need to do is to select Lasershow Converter MAX as the renderer.

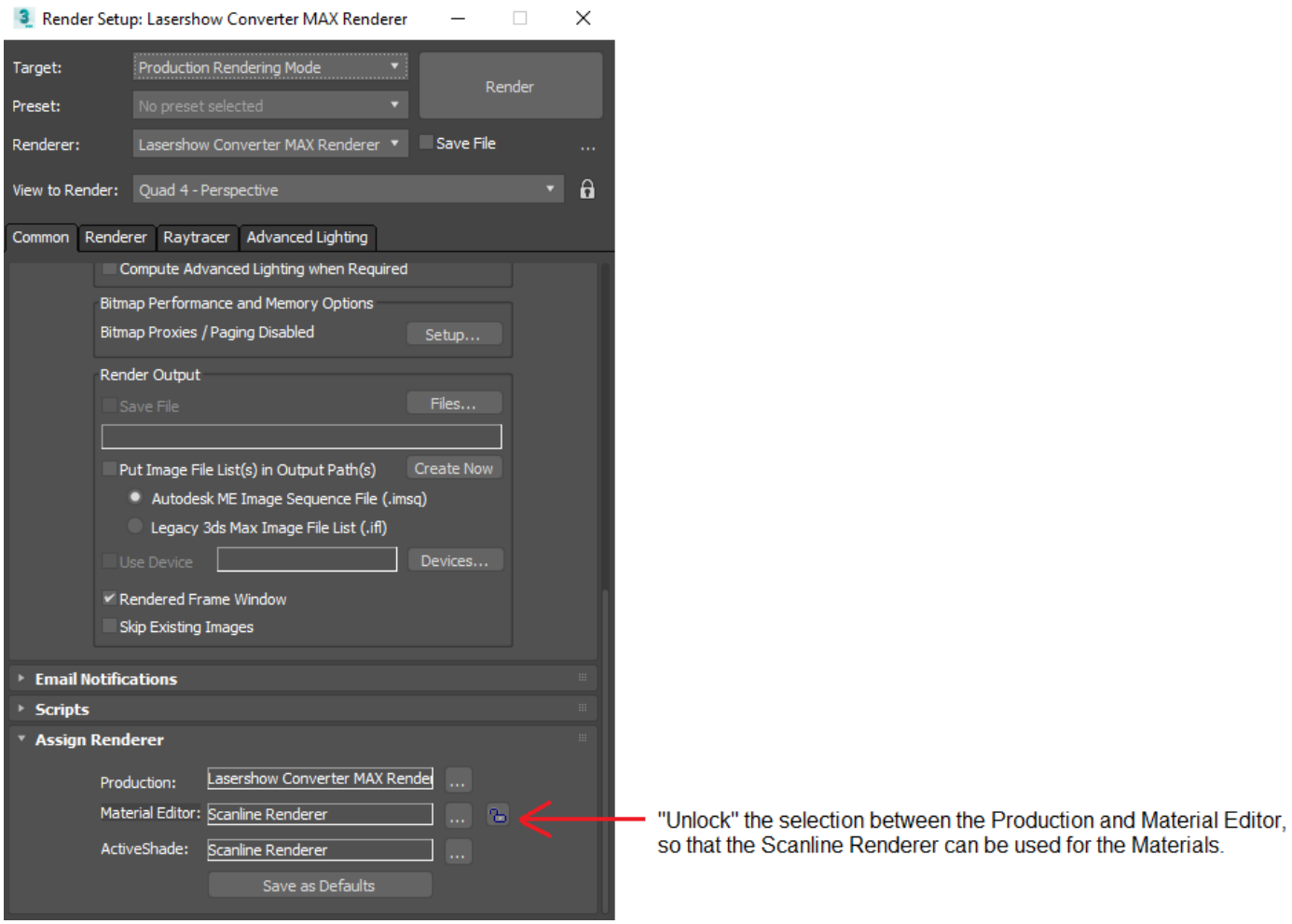
Selecting Lasershow Converter MAX as a renderer only needs to be done once for each scene that is created with 3ds Max. If you save a scene in 3ds Max, it remembers the renderer and all other settings.

The renderer is selected directly inside the **Render Scene** dialog. At the top of the window, you will see a drop-down list with the **Renderer** ,that lets you select different renderers. To select the renderer, simply select Lasershow Converter MAX Renderer as shown below.



Additional step needed to get materials to show up properly

Note that the “Render Scene” dialog box has tabs on it. You can assign the renderer at the bottom of the “Common” tab. We also recommend you “unlock” the selection between the Production and Material render, and specify the “Scanline Renderer” as the Material Renderer.



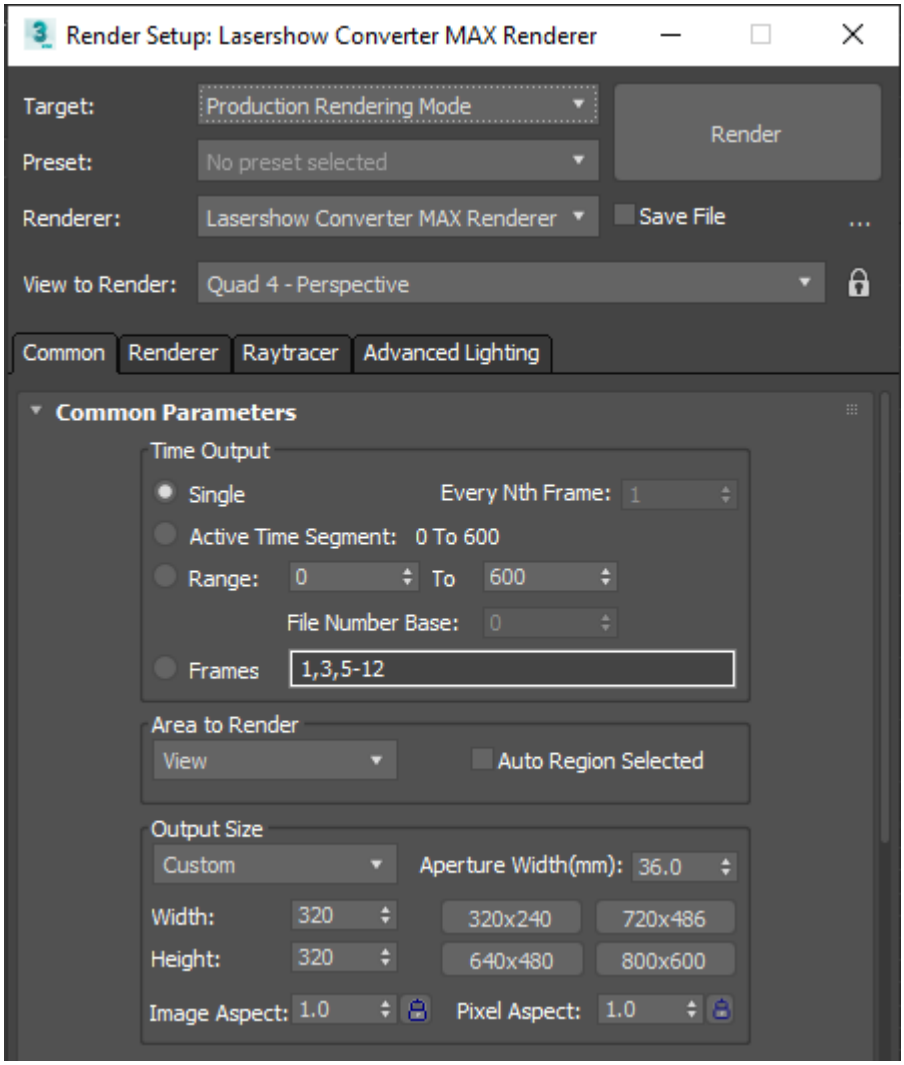
Note: Lasershow Converter MAX can not be used as the **ActiveShade** renderer.

Step 2: Rendering a frame

Now that Lasershow Converter MAX has been selected as the draft renderer, you can begin rendering this scene. To do this, select the Rendering tab on the main screen in 3ds Max and then click the **Render Scene** button on the toolbar. The Render Scene dialog (pictured below) appears.

In addition, we recommend that in the Output Size section, you enter 320 for width and 320 for height. These numbers control two things:

1. They control the size of the frame window that 3ds Max displays while rendering the scene. A 320-by-320 frame window is large enough so that you can see what is going on, but small enough to stay out of the way. (The **Virtual Frame Buffer** checkbox, in the **Render Output** section, must be checked in order for you to see this frame window. If you are previewing on a laser projector, you should uncheck the Virtual Frame Buffer; this speeds up the rendering process.)
2. By making the height the same as the width, you will be rendering scenes that take full advantage of the laser projector's 1:1 aspect ratio. (If you are producing laser animations that will eventually be projected along with video, you should use 320-by-240 or some other combination with a 4:3 aspect ratio.)

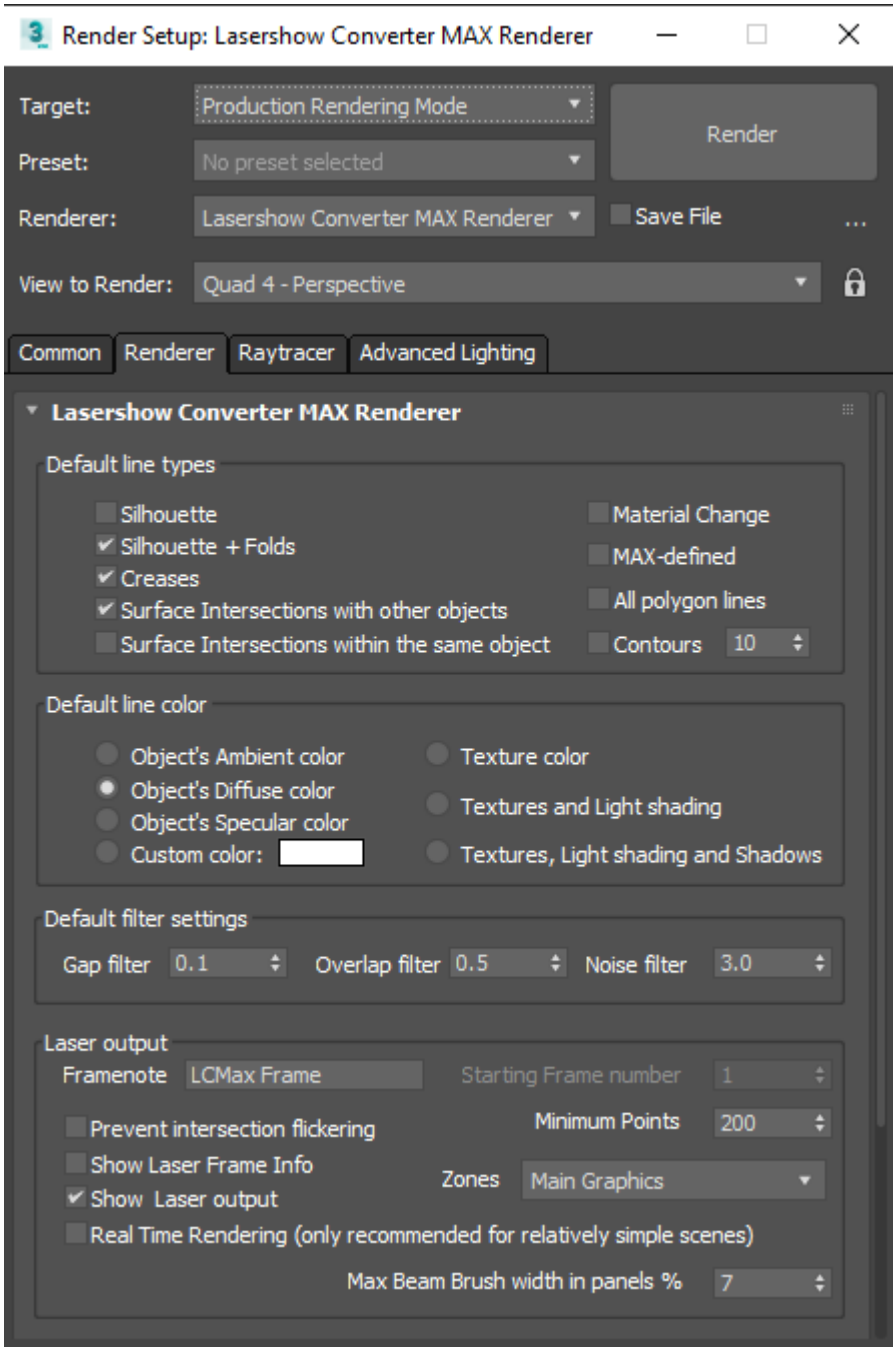


Note: Lasershow Converter MAX does filtering calculations, corner detection calculations and curve detection calculations based on the **Output Size** settings. The default values for the filter, curve and corner settings are based on a frame window output size of 320-by-320 or 320-by-240. If you choose a different output size (such as 640-by-480), this may require you to change Lasershow Converter MAX's filter, corner and curve settings.

As an additional benefit, when the frame window output size is set to 320-by-320 or 320-by-240, each pixel works out to be around one laser beam diameter. For additional information on this benefit, see the Object filter settings topic.

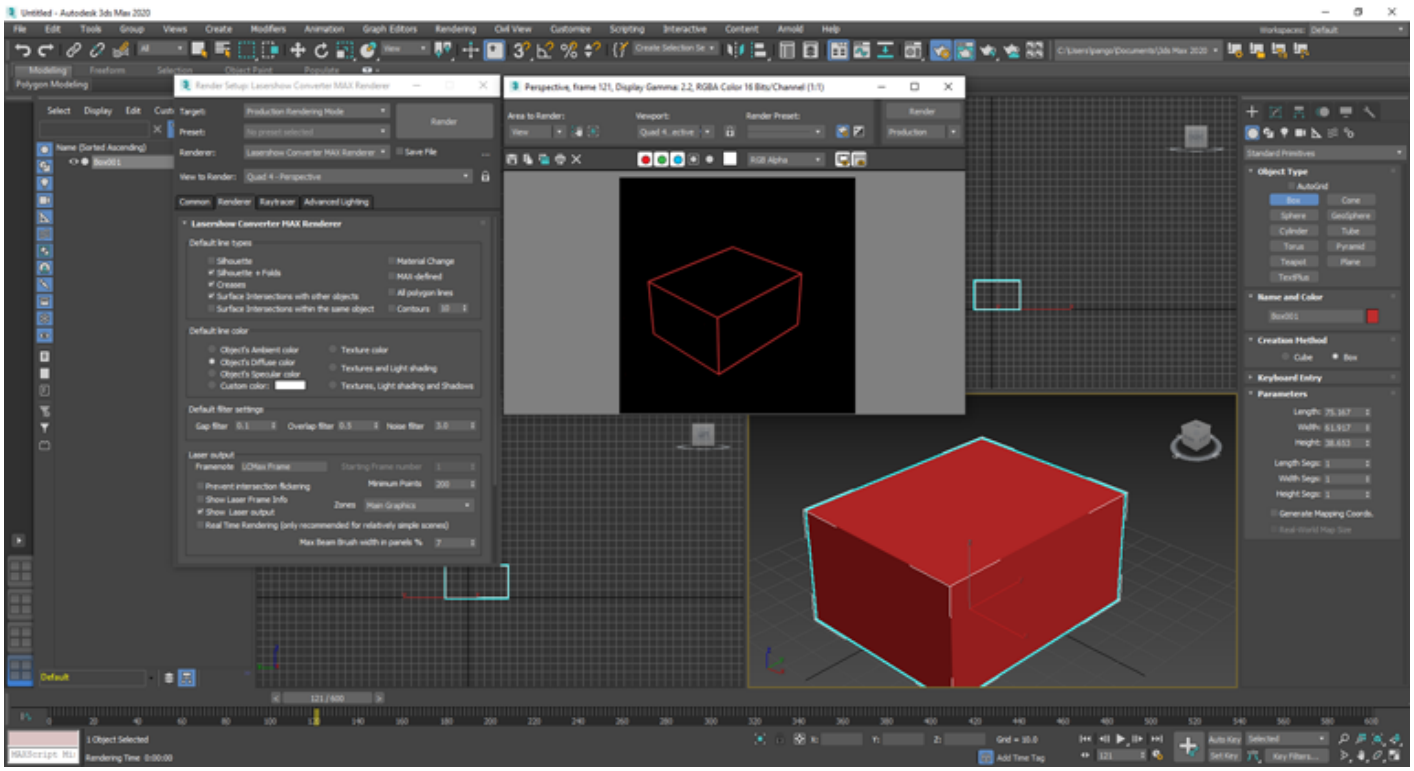
Rendering

Now that a few default settings have been set, normal operation can begin. Here is the Lasershow Converter MAX control screen. You will see a number of options that will be discussed in more detail later. For most scenes, these default[1)] options will be fine.



Click Render to see the results

To see the rendered results, simply click the **Render** button to see the resulting cube outline. The result can be seen below:

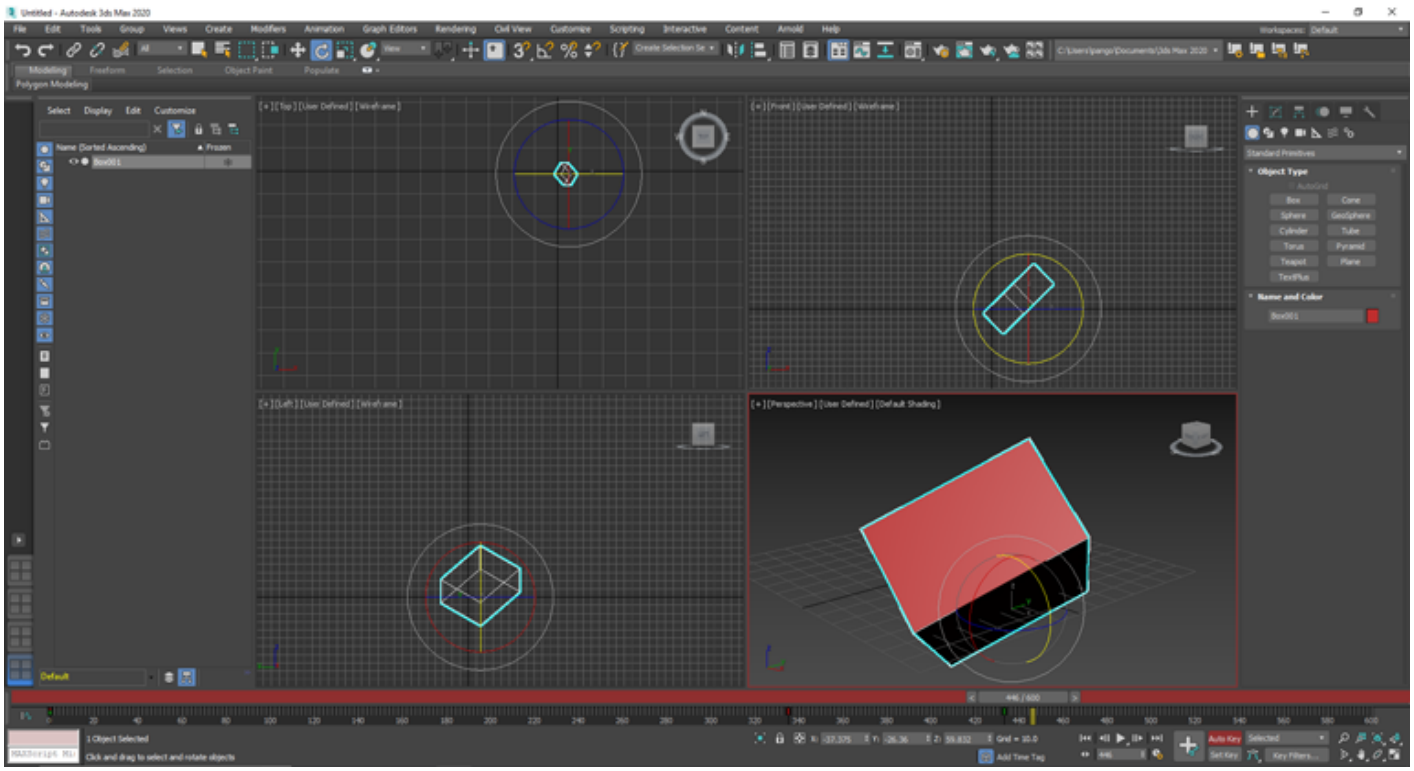


Step 3: Rendering an animation

In the last topic, we rendered a single frame of the cube. Let's create an animation of the cube rotating. To do this, close the **Render Scene** dialog and the frame window, then follow these directions:

1. Select the **Main Toolbar** tab in 3ds Max and click on the **Rotate** tool.
2. Move the **Time Slider** all the way to the right, to frame 100.
3. Click on the **Animate** button. It will turn red to indicate that you are in animation mode.
4. Using the **Rotate** tool, rotate the cube.

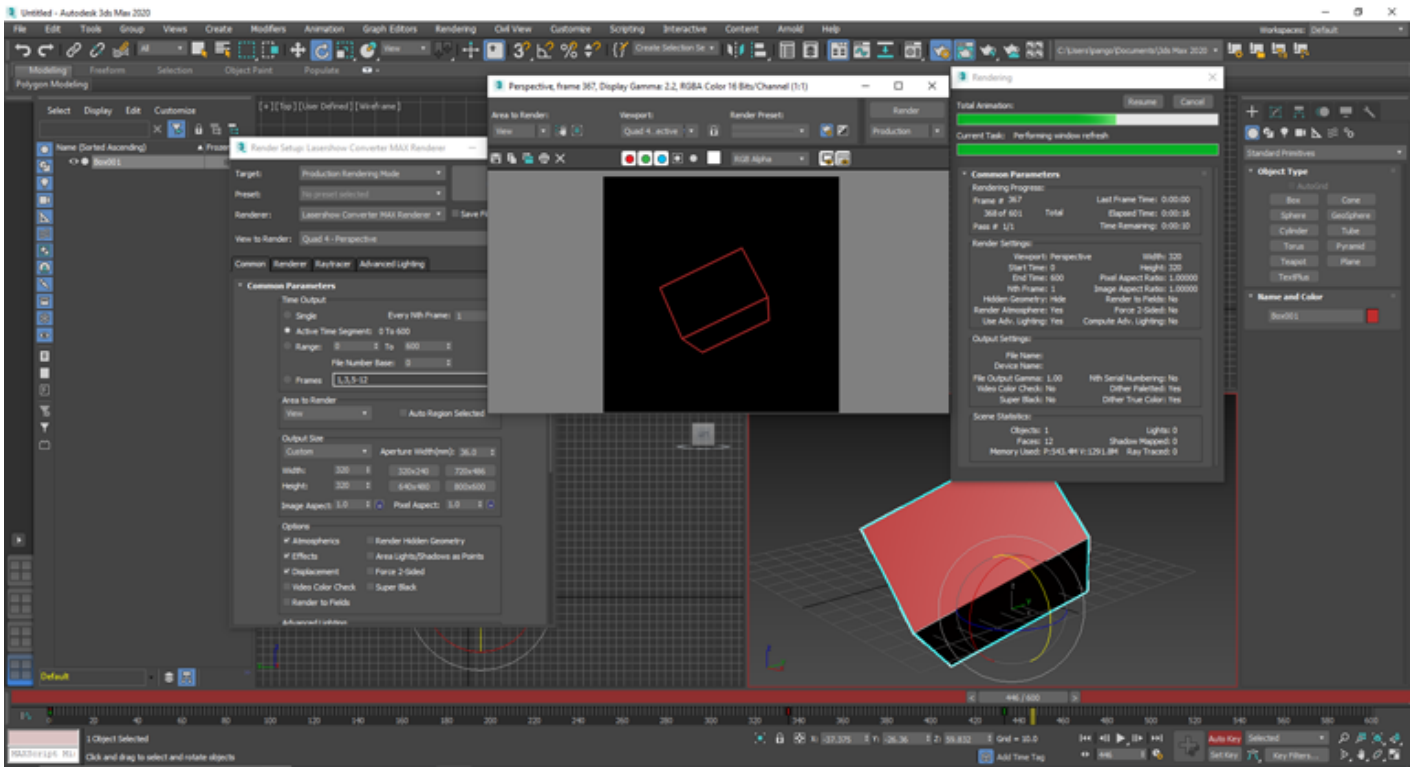
At this point, you should be able to move the **Time Slider** back and forth, and see the cube rotating.



Generate animation frames

To create a laser animation of the rotating cube, click on the **Rendering** tab in 3ds Max, and then click on the **Render Scene** button. The familiar Render Scene dialog box is presented.

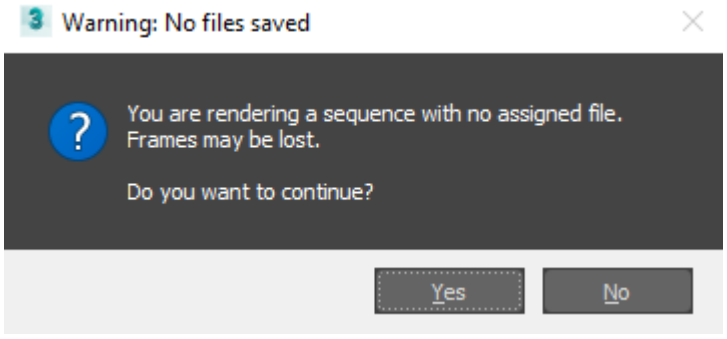
The last time, only one frame of the cube was rendered. This is because **Single** was selected in the **Time Output** section of the Render Scene dialog box. In this case, we want to create the full 100-frame animation, so select **Active Time Segment: 0 to 100**. Once this has been done, press the **Render** button. You will see each frame in the 100-frame animation as it is rendered.



Annoying "warning" message

When you click **Render** there is an annoying dialog box with an incorrect “warning” message. If you don't have a file name selected with the **Save File** check box checked, AND if you are rendering more than one frame, you get a box saying “Frames may be lost”. This message is wrong – no frames will be lost.

Simply click “Yes” to render the scene anyway.



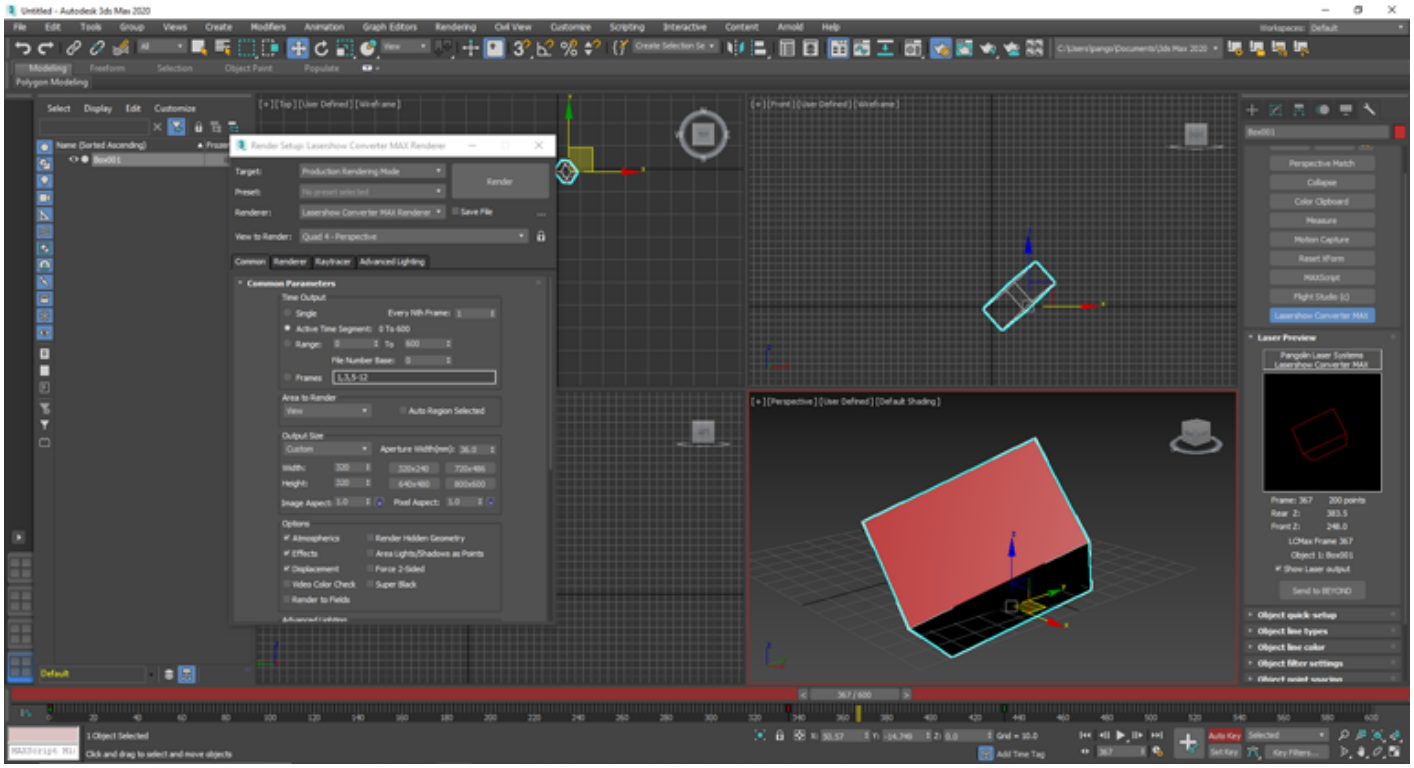
Step 4: Viewing an animation, and sending it to BEYOND

To see the complete animation in laser light, close the **Render Scene** dialog and the frame window, then click on the **Utilities** tab.

(If you have already installed the Lasershow Converter MAX utility plugin, then you will see a Lasershow

Converter MAX button on the Utilities tab. Otherwise you should go here to learn how to fully install the plug-in.)

Once you have clicked on the Utilities tab, then click on the **Lasershow Converter MAX** button. This displays the Lasershow Converter MAX utility control screen, which allows you to view and save the animation, and also to control advanced aspects of Lasershow Converter MAX. (This screen is shown in the lower right hand corner below.)



Just below the preview window in the utility plugin, you will see a check box called **Show Laser Output**. When this is checked, laser output will be shown on the laser projector in real time.

Now simply click the **Play** button in 3ds Max. You will see the scene played in the 3ds Max viewports and also in the Lasershow Converter MAX preview window.

Send the animation to BEYOND

Once the frames have been rendered as discussed above, click the button Send to BEYOND, which will send the rendered animation to the cue that is selected in BEYOND.

Step 5: Summary

Here is a summary of how to create laser frames and animations with Lasershow Converter MAX:

Selecting the renderer

1. Select **File/Open** and select the file name to load into 3ds Max.

2. Select **Customize/Preferences**, then select the **Rendering** tab.

3. Assign Lasershow Converter MAX as the draft renderer.

Rendering a frame/animation

4. Select the **Rendering** tab on the main 3ds Max screen, and then click **Render Scene**.

5. Set some default[1)] settings such as the frame window **Output Size** and the length of animation you want rendered.

6. Click the **Render** button to create the animation.

Viewing and saving the animation

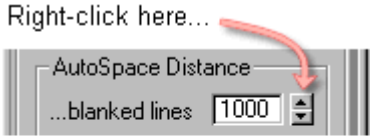
7. Click on the **Utilities** tab, then click the **Lasershow Converter MAX button**. (If you do not see Lasershow Converter MAX in the list of utilities, then you must install it by following these instructions.)

8. Press **Play** to view the resulting animation in laser light, and **Send to BEYOND** to save the animation.

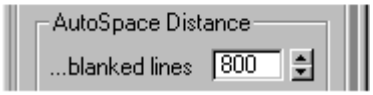
Go Back

1)

For any number value, you can return to the Lasershow Converter MAX default value by right-clicking on the up/down arrow:



... to return to default value



For non-numeric values, such as option buttons, check boxes, and drop-down lists, you cannot automatically return to the Lasershow Converter MAX default values. However, the pictures in this help file usually depict the default values, so you can reference the appropriate picture and manually set the default value.

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