

Quick Render

A plugin for Cinema 4D
Version 1.2, November 1st 2021

Overview

Quick Render (hereafter 'QR') is a workflow plugin intended to speed up test renders of a complex image. Say you have a scene which uses features such as sub-polygon displacement, global illumination, ambient occlusion, large bitmaps, the hair module, and blurry reflections. On the average machine, that may take quite some time to render, which is annoying when doing test renders. Sometimes you don't want to see all of those effects when testing something, but unless you turn them off in the render settings (and then remember to turn them back on again when you want them) your test renders can be very slow.

QR is intended to help you do fast test renders without constantly turning options on and off. It doesn't do anything fancy; all it does is turn off the options you choose, do the render, then turn them back on again. There are four things it's important to remember about QR:

- It isn't a replacement for C4D's render settings dialog. That dialog gives you far more control over the render options. QR just gives you a quick-and-dirty way to render the scene faster by turning certain time-consuming options off for that render. Only a small subset of all the render settings are available through QR.
- With one exception, QR will NEVER turn any render setting on. For example, if global illumination is not enabled in the render settings dialog, turning on the global illumination switch in QR will not turn GI on. QR will only turn things off if they are already on, never the other way around. The exception to this is the 'Render selected region' option, which is explained below.
- QR will not change any render options permanently. It only does so immediately before a render, and restores them to their previous state immediately the render is completed.
- You MUST use the 'Render' button in the QR dialog box to render an image with the various options selected. Using the regular C4D render commands will give you a full render, with nothing changed.

System requirements

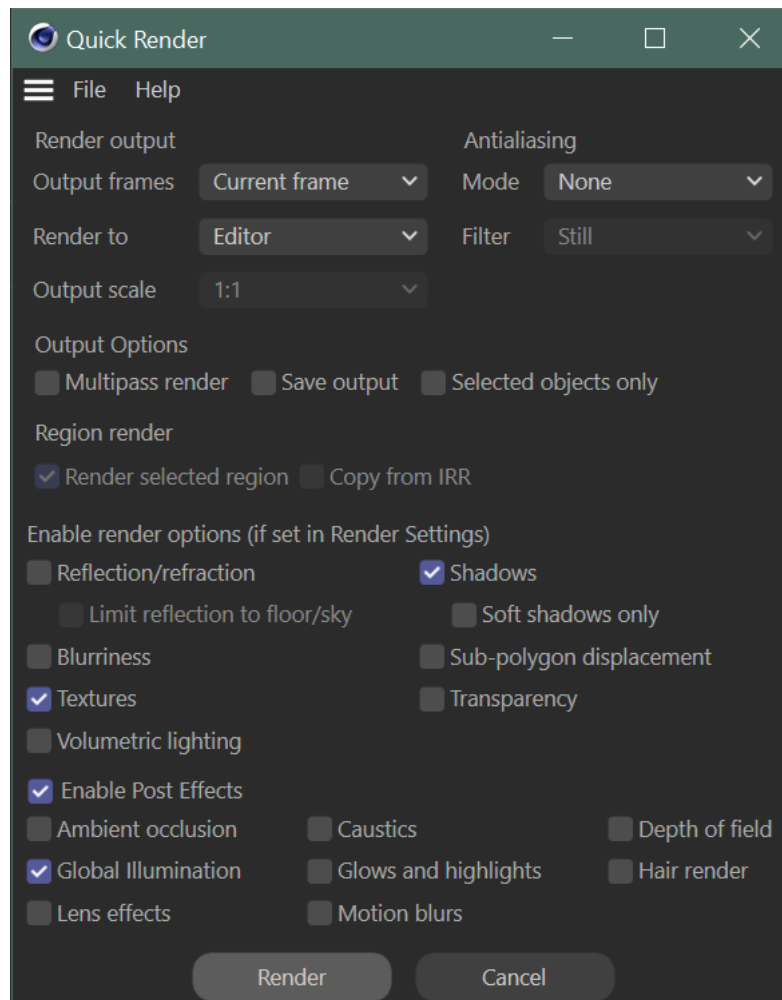
Quick Render requires Cinema 4D R16 or later.

Installation

Unzip the supplied archive into your C4D plugins location (the plugins folder in either the folder containing the C4D executable, or preferably in the user data folder).

How to use QuickRender

To invoke the plugin, click its name in the C4D Plugins menu. The following dialog box appears:



The above screenshot shows the QR default settings. You can modify these as follows.

Render output

1. *Output frames*: This is set to the current frame by default, so even if in the render settings dialog you have it set to render all frames, using QR you can render just the current frame. If you want to, you can set it to render all frames, or the preview range in the C4D animation slider.
2. *Render to*: You can choose to render either to the editor view (the default) or the picture viewer.
3. *Output scale*: If you choose to render to the picture viewer (not the editor), you can temporarily reduce the render size by the factor in this drop-down menu. Say you have a scene set to a size of 1600 x 1200 pixels. You'd really like to test render a smaller version of this - say a quarter of the size. All you do is select '1:4' from the drop-down, and the rendered image will be one-quarter the size. This can be a real time-saver for large scenes. Various size reductions are available. To render a full-size image, just select a scale factor of 1:1.

Antialiasing

With these drop-down menus you can set the antialiasing mode to None, Geometry, or Best; if

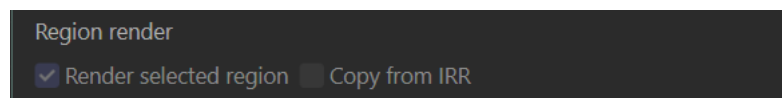
you choose Geometry or Best you can then select the still image or animation filter. Setting this to None (the default) will speed up renders considerably.

Output options

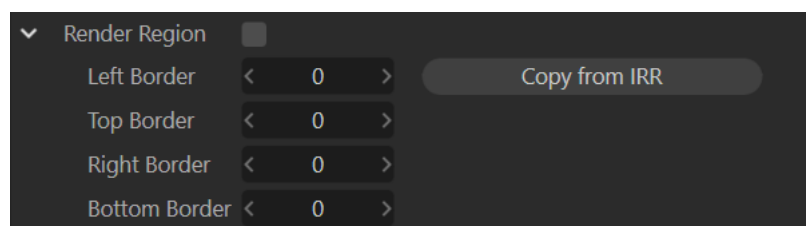
1. *Multipass render*: If you have this selected in the render settings, unchecking this option will render a standard image, not a multipass one.
2. *Save output*: As with multipass render, if the render settings are set to save an image when rendered, unchecking this option will no longer save the rendered result. This is useful for test renders when you usually don't want to save all the tests.
3. *Selected objects only*: If this option is checked, only those objects selected in the object manager will be rendered.

Region render

This is an exception to the rule that QR never turns any render option on, so some further explanation is needed. This is the relevant section of the plugin dialog:



Most C4D users know that it is possible to set up an interactive render region (IRR) which automatically re-renders a selected part of the editor view when changes are made to the scene. Not all users, however, know that you can force only part of a scene to be rendered to the picture viewer. This is the C4D render settings dialog showing the render region parameters:



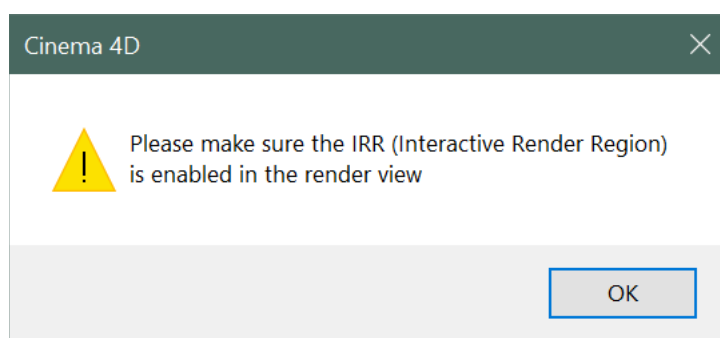
The four number fields hold the coordinates of the region of the scene to be rendered. You can enter any values in here, but there is also a very useful button labelled 'Copy from IRR' which copies the coordinates of the interactive render region into the number fields. This is clearly a useful way to get faster test renders by reducing the area of the scene to be rendered. How does QR handle this, given that you might want to use it to render a lower-quality image of the whole scene rather than part of it?

Very importantly, the two render region boxes are only available if you are going to render to the picture viewer, not to the editor. If you are rendering to the picture viewer, then the table below explains how the two boxes in the QR dialog box are used to determine which region is rendered:

Render selected region	Copy from IRR	Result
Off	(Not available)	The entire image is always rendered, even if 'Render Region' is turned on in the render settings dialog.
On	Off	The region shown in the C4D render settings dialog is rendered (even if the 'Render Region' box in the render settings is unchecked). If the coordinate parameters are all zero, the entire image is rendered.
On	On	The region coordinates are copied from the interactive render region, if one has been set up – see the caveat below. The region is then rendered. If an IRR has not yet been set up, the entire image is rendered after C4D shows an error message.

Note that this gives an interesting possibility, which is that you can choose between two different regions to be rendered. If you enter manual coordinates in the render settings dialog box, that is one possible region, and those coordinates will be used if the 'Copy from IRR' box is unchecked. The interactive render region may have different coordinates, which are used if the 'Copy from IRR' box is checked. This may – or may not – be useful to you. As before, remember that QR only changes the settings just before it renders anything, then changes them back to their original state after rendering.

There is a caveat to the use of the interactive render region, which is inherent in the way the IRR works. If you turn on 'Render selected region' and 'Copy from IRR' but haven't opened an interactive render region yet, then C4D (not the QR plugin) will display a message asking you to turn the IRR on, which looks like this:



This can't be avoided. QR cannot know if there are any settings in the IRR until it tries to retrieve them, which will generate that error message automatically, as there are no settings if the IRR hasn't been activated yet. Note that the IRR doesn't have to be visible on screen, despite the above warning from C4D – it merely has to have been activated at some point, to fill C4D's internal coordinates for it.

Render options

It's important to understand what these switches do. They ONLY have an effect if the option is

already turned on in the render settings. For example, if shadows are enabled in the render settings (as they usually are), unchecking the 'Shadows' box will result in no shadows being rendered. But if shadows happen to be turned off in the C4D render settings, checking this box will not turn shadows on again.

By default, only shadows and textures are enabled, since you will usually want these turned on even in a test render. This means that by default other effects such as transparency and reflection are turned off in your test renders, since these effects can often slow down rendering considerably. If you want to render these options, turn them on in QR.

Most of these options are self-explanatory. Some additional points to note are:

- Enabling shadows will also enable the 'Soft shadows only' box. When this is checked, only soft shadows (shadow maps) will be rendered. Hard (raytraced) and area shadows will not be rendered. Area shadows in particular can take time to render, so turning on 'Soft shadows only' will shorten render time at the expense of losing your area shadows.
- If you enable 'Reflection/refraction', then the 'Limit reflection to floor/sky' box will become available. Turning that on will mean that only the Sky and Floor objects will be reflected in reflective objects in the scene, which will provide some reflection but will be faster than if all objects were reflected.

The table below shows how these options work in Cinema 4D's native renderer (or Advanced Render) and how they work in Vray:

Option	Render result
Reflection/refraction	Turns off reflection and refraction.
Limit reflection to floor/sky	Only the Sky and Floor objects will be reflected in reflective objects in the scene, which will provide some reflection but will be faster than if all objects were reflected.
Blurriness	Turns off blurred reflections and blur in transparency.
Textures	Causes bitmaps not to be rendered.
Volumetric lighting	Turns off volumetric lighting.
Shadows	Turns off shadows.
Soft shadows only	Causes only soft shadows (not area or hard shadows) to be rendered.
Sub-polygon displacement	Turns off SPD.
Transparency	Turns off transparency.

Post effects

These options can disable various post effects. This is not a complete list of all C4D's post effects, but does include those which have the greatest impact on render times.

If you uncheck the box next to 'Enable post effects' you will disable ALL post effects! This includes global illumination, which C4D treats as a post effect (even though it isn't) and all the other post effects including the ones not shown in the QR dialog.

Leaving that box checked will let you disable certain post effects selectively. In fact the only one enabled by default is global illumination, as this is usually pretty fundamental to a scene and even in test renders you will probably want it left on.

The other post effects are all self-explanatory. Uncheck the box to turn the effect off; check the

boxes to turn them on (of course, they will only be rendered if they are currently turned on in the main render settings dialog).

The table below shows how these options work in Cinema 4D's native renderer (or Advanced Render) and how they work in Vray:

Post effect	Render result
Ambient occlusion	Turns off ambient occlusion.
Global illumination	Disables global illumination.
Lens effects	Turns off lens effects.
Caustics	Turns off caustics.
Glow and highlights	Turns off the Object glow, Glow, and Highlights post effects
Motion blur	Turns off motion blur.
Depth of field	Turns off DOF.
Hair render	Turns off the rendering of hair. Note that this works by disabling all hair objects in the scene (turning off the hair render post effect has no effect if the Hair object is set to generate geometry).

Rendering

Once you have made your selection, you can render the image using the render button at the bottom of the dialog.

IMPORTANT - using any of the C4D render commands such as Render Active View, Render to Picture Viewer, etc. will render a full image without any options being disabled by QR! To render with the selected options turned off, you **MUST** use the 'Render' button in the QR dialog. Remember, QR switches these options off just before you do a render, then switches them back on again. So if you want to do a full render with all options selected, just use C4D's render commands in the usual way.

Resetting QR to the default settings

If you alter the settings, then want to change them back to the defaults, rather than have to change each of them individually you can choose 'Reset settings' from the plugin's File menu. This will reset QR to the factory defaults, or to your own default settings if you have changed them (see below).

Altering the default settings

I have chosen default settings which seem appropriate to me. However, you may not agree with this. You may wish that by default QR turned GI off, or set AA to Geometry, or rendered to the picture viewer. You can make your preferred settings the defaults by altering the QR settings as you like them, then click 'Save settings' from the plugin's File menu. From now on, when QR first starts up, or when you choose 'Reset settings' from the File menu, QR will load your own default settings.

Help

This help file can be accessed at any time by clicking 'Show help...' from the plugin's Help menu. The current version of Quick Render can be found by clicking 'About...' in the plugin's Help menu.

Effects on render time

What effect does using QR have on render times? The table below shows the result of rendering a test scene on my development PC (not a particularly fast one!). The scene uses several effects likely to slow down rendering, including:

- hair
- blurred reflection and transparency
- global illumination
- ambient occlusion
- best antialiasing
- SPD
- object glow
- area shadows

With all options enabled, the render time for an 800 x 600 image was 5 minutes and 19 seconds. Here are the render times with various options selected in QR:

Option	Render time (mm:ss)
Full render, all options	05:19
Antialiasing to Geometry	01:34
Antialiasing to None	01:22
With antialiasing set to none in the following tests the following options were disabled:	
No SPD	01:13
No Ambient occlusion	01:09
No Hair	01:00
No Blurriness	00:45
No SPD, AO, Hair, And Blurriness	00:16
No SPD, AO, Hair, Blurriness, Reflection, and Transparency	00:10

For a test render, where you might only be looking at object placement or animation, the difference between a five minute test and a ten second test is substantial.

Contact details

I hope you enjoy using Quick Render. If you have any comments, feature requests, or (especially) bug reports, please let me know. You can send me a message via my website at <https://microbion.co.uk/html/contact.htm>.

Steve Pedler
November 1st 2021

Legal stuff

I really hate these things. I make free software, you use it, what's the problem? Unfortunately we live in a world where everybody seems to reach for their lawyer at the drop of a hat. The only purpose of what follows is to emphasise that if you use Quick Render, you do so at your own risk, as I don't guarantee that it will or won't do anything. So please don't sue me if it doesn't work for you.

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In plain English, this means that use of Quick Render is your own responsibility. If the program trashes your system, or crashes when manipulating critical data, you take the responsibility. Microbion Software and the program's author accept no responsibility for any untoward results.

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