Interactive Rendering in Maya

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Starting IPR

Interactive Preview Rendering can be started by clicking the IPR button in the RenderMan shelf.

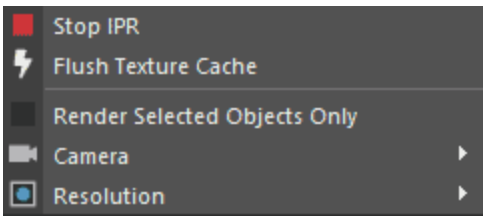


The usual methods in Maya for starting IPR also work. The only difference is that the button in the RenderMan shelf always switches to RenderMan before starting a render.

You may also make use of the Interactive Refinement control in the Render Settings to let RenderMan decide how often to update pixels, providing you with a faster preview that updates or "refines" over the next few iterations, filling in pixels.

The IPR button offers a menu with some convenient options for starting up with a particular camera or resolution.

- Stop - Ends the interactive session
- Flush Texture Cache - If you've altered textures and want to see the changes, flush the cache to update them in the session
- Render Selected Object Only - This will render only the objects that are selected in the viewport. Take care not to leave this on accidentally or you may consider this an error
- Camera - Specify the camera to render from (if not from the last active viewport)
- Resolution - Specify the resolution (test percentages, etc.)



Stopping IPR

When IPR is running, it can be stopped from the popup menu of the shelf button.

There is also a cancel button in "It" that works to stop IPR.

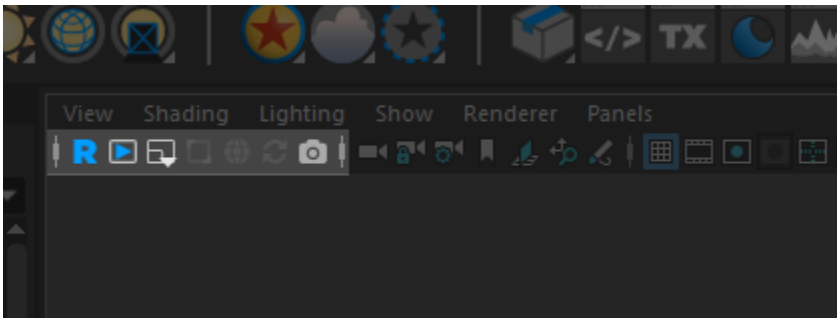


Viewport Rendering

> ⚠ Performance consideration: The viewport rendering renders to the resolution of the window in your monitor. Example, a 4k capable monitor at native resolution will trigger a render with matching resolution even if your render settings say to render at a lower setting. If you're not accustomed to rendering your screens resolution setting, this can be...surprising.

We display a progress bar at the bottom of the viewport when rendering interactively. Should you become distracted or fail to see progress visually (maybe it's highly converged) the progress indicator at the bottom of the window can tell you how far the rendering has gone towards completion based on your quality settings.

The Viewport has a button in the top left corner for starting/stopping IPR, playblasting, resizing resolution, creating a crop window, quickly changing to the PxrVizualizer Integrator, restarting (for changes that do not trigger an update), or taking a snapshot.



You may toggle a progress bar at the bottom the viewport by right-clicking the IPR button. You can find settings for this display in the RenderMan Preferences.

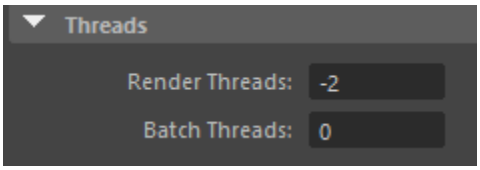
Additionally, you may right-click on the camera icon to send a snapshot to the Image Tool ("it") with or without the geometry outlines, we default to an anti-aliased version but can be turned off by deselecting "smooth geometry"

The crop window tool can be sized/re-sized by drawing on the window or selecting the corners. Mouse dragging from the center moves the window and clicking outside the window negates it by setting it to the viewport size.

The PxrVisualizer Integrator is great for quickly navigating scenes, once deselected it returns to the previously chosen integrator.

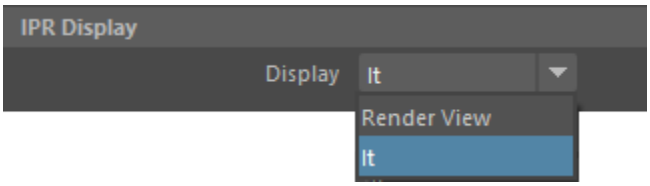
IPR Threads

In the threads section of the RenderMan Preferences, the Rendering Threads setting is used for both Preview and IPR renders. The default value of -2 means that all but two CPUs will be used for rendering. It's advised to leave *at least* one thread to allow for interactivity in Maya while rendering is underway. Zero threads means all processors will be used for rendering. You can also choose a specific number.



IPR Display

In the RenderMan section of Maya's Preferences Window, you can choose whether IPR should use Image Tool (It) or Maya's Render View.



Select Object or Material from Render

When running IPR in "It", objects or their materials can easily be selected from the render. Click on one of these icons in "It" to activate object or material picking. Then click in the render. The corresponding object or material will become selected in Maya.



Hidden Objects

When rendering to IPR, templated nodes are pruned from export but hidden objects are not (in case you wish to unhide them interactively). During a batch render, both hidden *and* templated nodes are pruned from export

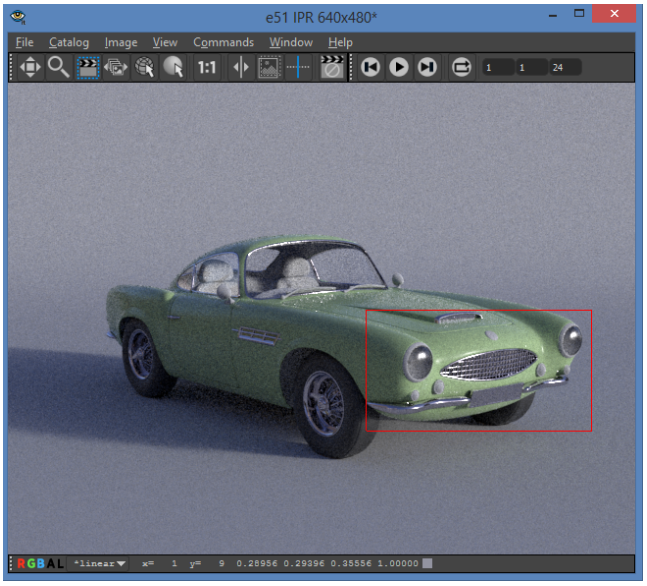
The preference called "Prune Invisible Nodes" which applies during IPR can be found in the RenderMan Preferences. By default, during IPR invisible nodes are not pruned, to allow for easily changing visibility interactively. You can find this in Preferences > RenderMan > IPR

Crop Rendering in It

To crop render in "It" during IPR, click on the crop button.



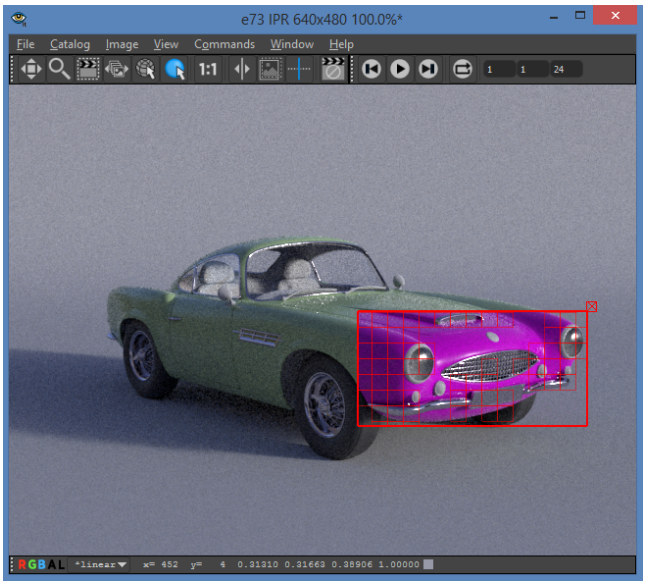
Draw a crop region in the "It" window. Then hit the 'r' key to trigger an IPR update. After hitting the 'r' key, pixels will only update inside the crop window.



Remove or Resize Crop Window

Click inside the crop window in "It" to make it editable. An 'x' appears in the upper right corner of the crop window when it is editable. Drag on any of the edges to resize. Or click on the 'x' in the upper right corner to remove the crop window. Click outside the crop window to make it non-editable again.

If you resize or remove the crop window, hit the 'r' key again to signal that IPR should start using the region.



Crop Rendering in Render View

To crop render in Render View, simply click and drag in the image to draw a crop region. IPR will immediately update with the new region. To draw a new region, click and drag again. The crop region can be removed by just clicking once in the image.

Rendering Selected Objects

To prevent objects from being exported, you may select the objects and place them into a Maya Display Layer. Then switch this layer to *Template*. The objects that are members will not be exported. Otherwise, objects are exported regardless of visibility so that during IPR rendering you can quickly make objects visible/invisible without having to re-export or restart the render.

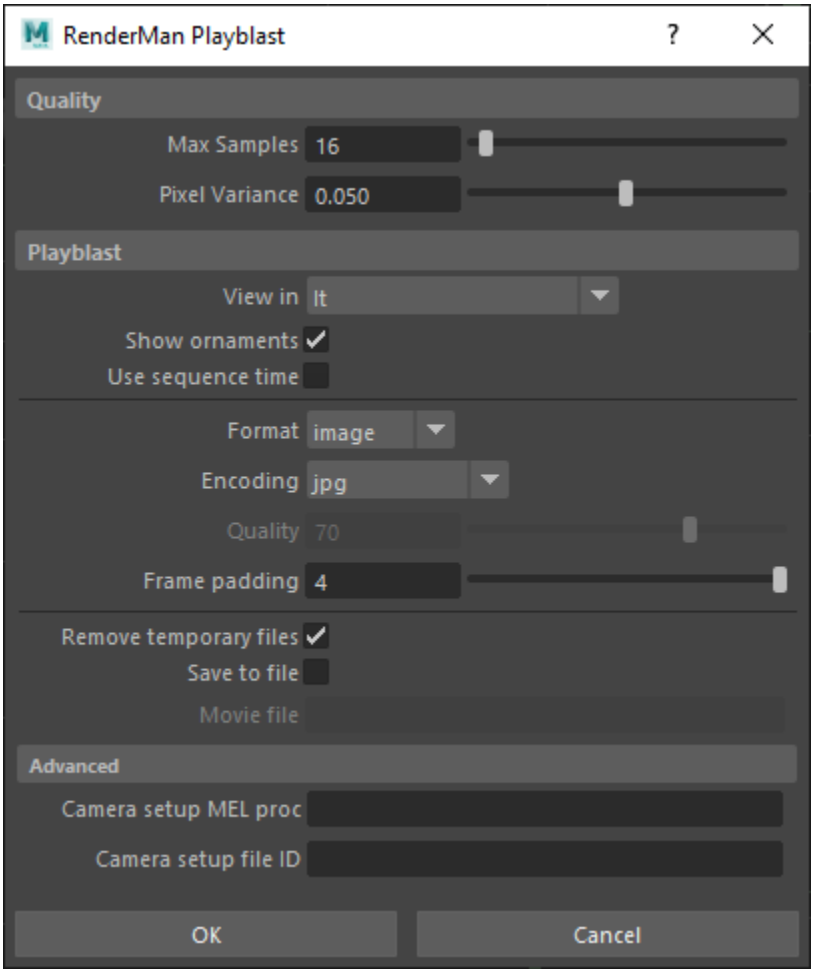
You may also render selected objects by choosing the option from the Maya Render View, Windows > Rendering Editors > Render View > Render > Render Selected Objects Only, or by toggling a mel shelf button using this mel command: switchSelectObj;

Alternatively you can specify on and off buttons using: optionVar -iv "renderViewRenderSelectedObj" 0; Where 0 is off and 1 is on.

Playblasting

In the RenderMan Preferences there is now a section to specify controls for Playblasting from RenderMan in the viewport.

> ⚠ You **must** use the provided RenderMan Playblast menu as the Maya menu doesn't invoke our tools for rendering a playblast.



When selecting the Playblast RenderMan viewport icon, the above menu will pop up. This will take settings from the Maya Playblast window but also adds controls for Quality and viewing for "it". Pressing "OK" begins the Playblast process. Note that each image will reach the values selected under quality before moving to the next frame. Better quality may take significantly longer to render a playblast. For final quality renders, use the standard Batch Rendering options.