# Tutorial: Distributed renders with 3delight

**Distribute render jobs to spare computers to free up your production machine**
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**Coverage:** Creating RIB files on one computer and transferring them to another computer to render with 3Delight Standalone Free.

**Software:** DAZ Studio 4.6 Pro (principles applicable to other 3D programs), 3Delight Standalone Free ([link](link)) (principles applicable to other RIB-compatible render engines), Windows 8.1 x64 (principles applicable to other systems). A 64 bit machine is required for 3Delight Standalone.

**Target Audience:** Intermediate PC user.

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## Why distributed renders? How do they compare with render farms?

The main advantage of distributed renders is to free up your production machine for further work by transferring the render out to a spare machine. This is a less mature form of the render farm concept. A render farm can distribute portions of work across multiple computers, and take advantage of power from low-spec machines by combining them to get the job done. The distributed render concept is limited to handing a whole job to one computer, which must therefore be a high-spec one. However, systems that do not currently lend themselves to the most common render farm configurations (eg Windows 8) can be deployed for distributed rendering. You can also use this method to queue multiple renders while you sleep.

## Hardware requirements

You will need a high-spec machine for distributed renders. 3Delight Standalone requires a 64 bit machine, and you will need a good CPU (probably no lower than i5, i7 optimal) and memory (8GB minimum, 16GB optimal). 3Delight Standalone Free only supports four processing cores, with higher cores requiring an expensive pro licence, so if you are lucky enough to have something like a six-core Mac Pro, you won't be able to access them all. However, you don't need a flashy screen or a huge hard drive or a good graphics card. I'm using a gaming laptop with i7 quad core, 16GB RAM, and a relatively small hard drive.

## Ways of transferring files

RIB files and their collected textures can be pretty big. My most recent job came out to 1.2GB. So you want to have a fast and easy way to transfer your files. I have a wired network, but a wireless network will do the same job (albeit slower), as will flash drives, external hard drives, burnable DVDs, and the like. If you need help networking your computer for file sharing, take a look at steps 1-3 in my tutorial [Daz Over A Network](Daz Over A Network).

## Step 1: Install 3Delight

It's important that you install 3Delight on your render machine *only*. There is no technical reason not to install it on multiple machines, but the licence for the free version is limited to one machine per site. I will refer to the possibility of multiple render machines below, but this is to allow for paid licences and/or other render engines.

Download 3Delight Standalone Free [here](here), and install it, accepting all defaults along the way.

## Step 2: Set up your RIB directories

RIB files reference collected textures using full file paths (eg, c:\ribs\test_collected\xxx), so you need to use the same file path on your production computer and your render computer. Otherwise, the RIB file you create with your prod machine won't be able to find the textures in the render machine. You'll come out with the shapes in plain white. So, on your prod machine and your render machine(s), make a directory with exactly the same name in exactly the same place. Mine is c:\localrib on both machines.
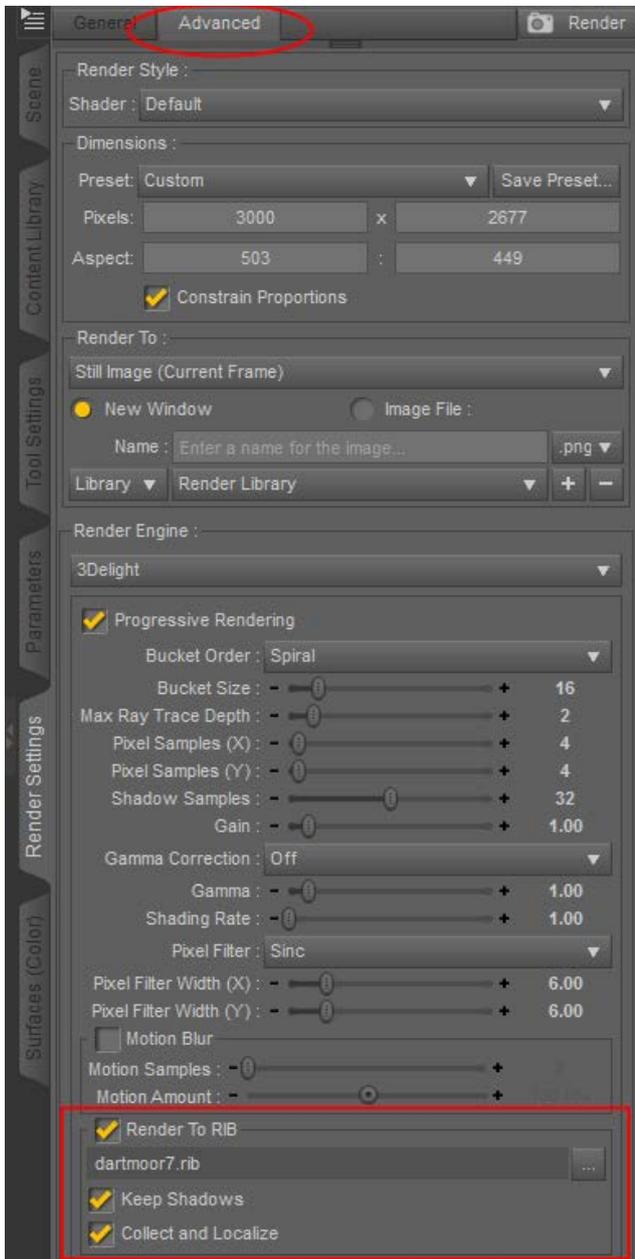


## Step 3: Set up your render and export as a RIB with collected files

In DAZ, set up your 3D scene and render settings as normal, using 3Delight as the render engine.

Go to the Advanced tab (if you're not already there). At the bottom is an option *Render to RIB*. Tick it.

Click on the [...] button to define a filename for your RIB file. Make sure you put it in the RIB directory on your prod (current) machine (in my case, c:\localrib). **Important:** If there is already a file by that name in the directory, it will be replaced without a confirmation screen, so be very careful here.

Make sure the options *Keep Shadows* and *Localize and Collect* are ticked.

Now, click *Render*. You will see the usual little popup explaining what's going on, and the usual big render preview window with a black screen. The render preview window will stay black, while the little popup will disappear after a couple of minutes. Once the little popup has vanished, it's safe to close the black preview window.

**Important:** Your render settings will carry forward into your next scene, so you must now un-tick *Render To RIB.* Otherwise, the next time you render, even if it's just meant to be a little low-quality test render, you will accidentally overwrite the RIB file you just made.

## Step 4: Transfer the files to the render machine

Go into your RIB folder on your production machine. You will find the RIB file you just defined, plus a matching directory with the suffix *_collected.* So test.rib will have a matching directory called test_collected.

Copy the RIB file and its matching directory to the corresponding RIB folder on your render machine. So c:\localrib\test.rib on your production machine becomes c:\localrib\test.rib on the render machine.
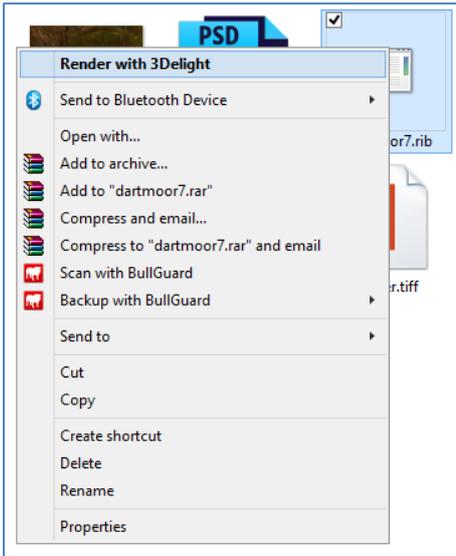
## Step 5: Start the render

On your render machine, go into the RIB folder, and go *inside* the _collected subfolder for the RIB you want to render. You will find another copy of the RIB inside the _collected folder, and this one is designed to operate by only referencing the collected files. (The base RIB file, the one in the *same* directory as the _collected folder, will probably reference files from the prod machine and is therefore unlikely to work as expected).

Right-click the RIB file that's inside the _collected folder. You should see an option *Render with 3Delight.* Click it.

You will see firstly a small black window with white scripting text (like the command prompt window). The occasional error will not necessarily break the render - some are just to do with the way the preview is displayed. A common error of this sort is *PixelFilter reset to 'box' 1x1 (display driver requirement).*

Then, a screen will pop up with a grid, and the title bar *I-Display*. If you enabled progressive rendering in your render setup, this screen will show a preview of your render (generated over a period of time). You can resize and minimise this window safely, but don't close it, as this will cancel the render(s).

You can initiate further renders in the same way if you like. The bottom of the I-Display screen will show each of them and you can navigate between them, although in practice, it's likely that the first one will fully complete before subsequent ones will begin. This means you can, for instance, set up multiple pieces in a day and then set them to run in a queue overnight. Just be aware that your machine may auto-restart overnight, killing the job, due to automated updates. The highest-risk time for this is the second Tuesday of the month (Patch Tuesday), when Microsoft releases security updates.

## Step 6: Save the renders

A render is complete when the render is visible in the I-Display window **and** the orange progress bar has disappeared.
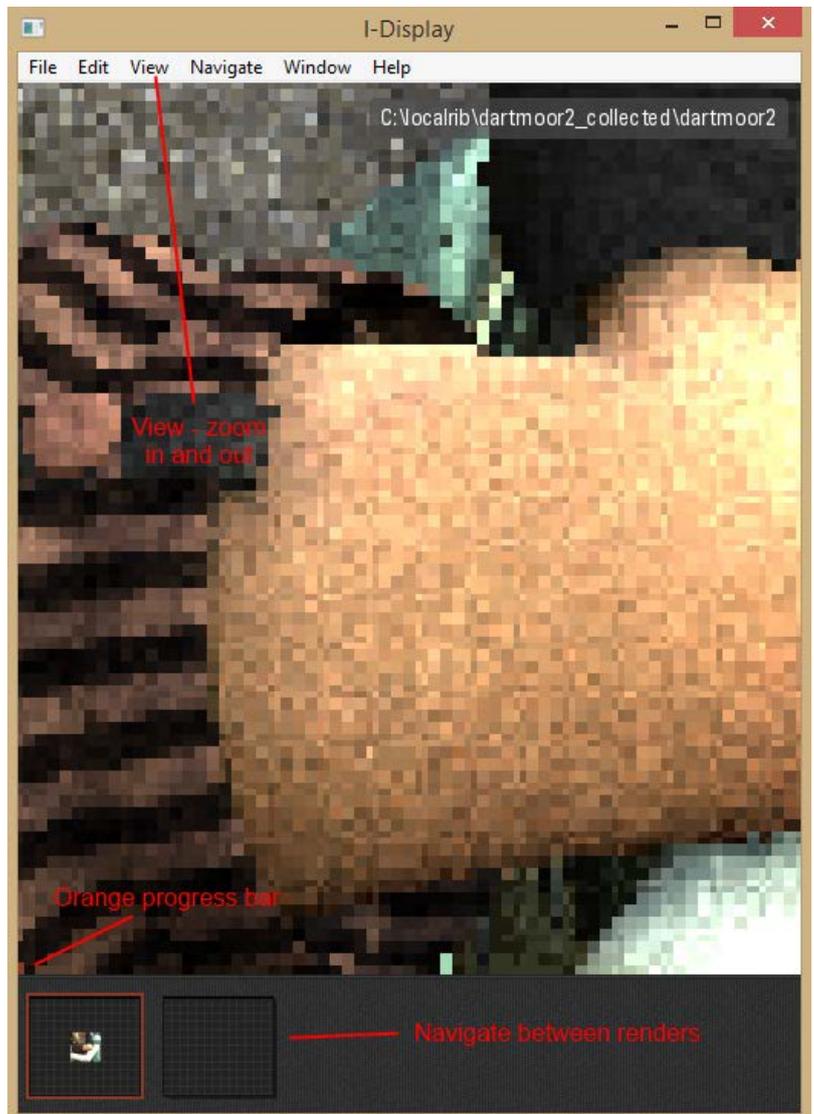
Select the render (if you have multiple ones in the queue) so it is visible in the I-Display window. Then, choose *File - Save Image As* and save the image in the format you like. (I like PNG because it makes a lot more colour information available to Photoshop than JPG). Do this for all the queued renders.

The *Save Image As* option is greyed out if the render is still going. If the render is one of those ones that's slowed to a crawl, but you're happy with what you can see already, just hit *File - Abort Render*. The preview will stay as-is and then you can save the image.

That's all there is to it! Happy rendering!