

Set Up Distributed Rendering

This page provides information on setting up Distributed Rendering.

Step by Step V-Ray DR Setup

To use V-Ray distributed rendering you need to have both V-Ray for 3ds Max and Autodesk 3ds Max installed on both the render client and the server machines. When using the V-Ray GPU render engine, V-Ray Standalone (or V-Ray for 3ds Max) installation is sufficient for each server machine.

1. Set up the **Render Servers** by starting V-Ray Spawner on each server machine. It starts the 3dsmax.exe in server mode which appears as 3ds Max minimized down in the taskbar. It should have the title "vraydummy.max". (This step is not required if the server machine uses spawner as service)
2. Set up the **Render Client**. In the V-Ray for 3ds Max interface, enable Distributed rendering from Render Setup > [System](#) rollout > Settings tab. Use the **Render Server** button to add the IPs of all your Render Servers.

Step by Step V-Ray GPU DR Setup

V-Ray GPU can run on multiple CUDA enabled graphics devices. The preferred set of devices on each server machine must be adjusted before initiating the distributed rendering. To specify which devices to use, go to Windows Start > Programs > Chaos Group > Select devices for V-Ray GPU rendering of each render server machine and pick.

By default, the render server machine uses all its appropriate GPU devices for V-Ray GPU distributed rendering, if nothing has been specified beforehand.

1. Set up the **Render Servers**. You can do this in two different ways: (This step is not required if the server machine uses V-Ray GPU render server as service)
 - a. Start the render server on each server machine from **C:\ProgramData\Microsoft\Windows\Start Menu\Programs\V-Ray 6 for 3ds Max####Distributed rendering\Launch V-Ray GPU render server for 3ds Max####**.
 - b. Start the V-Ray Standalone and enter the "vray -server" command in the command prompt.
2. Set up the **Render Client**. In the V-Ray for 3ds Max interface, bring forth the Render Settings and in the Performance tab under the [Distributed Rendering](#) rollout switch **On**. Use the **Render Server** button to add the IPs of all your Render Servers.

TCP/IP Port Numbers

Distributed rendering works over TCP/IP and requires the following ports:

Renderer type	Port number	Port type
V-Ray	20204	TCP/IP
V-Ray GPU	20206	TCP/IP

Port 20205 is only used by render servers to broadcast a message that they are ready to join an ongoing DR rendering.

V-Ray Standalone when set as render server receives rendering requests on port 20207 by default.

V-Ray DR Spawner command line options

You can add command line options to the V-RaySpawner.

Numa options

You can specify Numa command line options to V-RaySpawner.exe to better utilize processor nodes with Numa architecture:

Command	Description
-numa[=N]	Select the number of render server processes to start. If N is not given, N=0 or N>=M, one process per NUMA node is created. Here "M" is the number of selected nodes using "-node", or the number of all available NUMA nodes if no "-node" is used.
-node=node1[, node2][, node3]...	Select NUMA nodes that will be used for the render server process(es). Default - use all available NUMA nodes.
-port=port1[, port2][, port3]...	Select listening ports for the render server process(es). If the number of processes is greater than the number of ports given, the last port is auto incremented. The default listening port is 20204 for 3ds max. The render client should be set to use the corresponding port range.
-Service	Register <i>vrayspawner</i> as a Windows service.
-UnregServer	Unregister <i>vrayspawner</i> as a Windows service.
-cmdparams=" <parameters_str ing>"	Specifies a string to be provided directly as an argument to the spawned application.
-tempdir=" <temp_folder_p ath>"	Override path for <i>vrayspawner</i> 's temporary files folder. Vrayspawner is using %temp% to write some files needed for spawning applications.
-AppName=" <executable_file>"	Override spawned application file name. For example, for 3ds Max the default name is 3dsmax.exe.

Example: Using 3ds max ##### and a system with 8 NUMA nodes:

```
vrayspawner####.exe -numa
```

spawns eight 3dsmax.exe processes, every running on single NUMA node and using listening ports 20204-20211

```
vrayspawner####.exe -numa=4
```

spawns four 3dsmax.exe processes, every running on two NUMA nodes and using listening ports 20204-20207

```
vrayspawner####.exe -node=3,5,6 -ports=30000,40000{ }}
```

spawns three 3dsmax.exe processes, running on NUMA nodes 3,5 & 6 and using listening ports 30000, 40000 & 40001

```
vrayspawner####.exe -node=2,3,4,5,6 -numa=3
```

spawns three 3dsmax.exe processes, running on nodes (2,3) (4,5) & (6) and using listening ports 20204,20205 & 20206

is the 3ds Max version.

Notes

- Every render server must have all the plugins and texture maps in their proper directories loaded so that the scene you are sending does not cause them to abort. For example, having a PHOENIX plugin used in the scene causes a server failure in any of the servers that do not have the PHOENIX plugin installed. If you have mapped your object with a file named JUNGLEMAP.JPG and you do not have that map in the BITMAPS directories of the render server installation - you will get bucket rendered at that machine as if the map was turned off, unless you also turned on the **Check for missing files** option in the V-Ray [System](#) rollout, in which case the render server will refuse to render the scene.
- When you cancel a DR rendering, it may take some time for the render servers to finish working and they may not be immediately available for another render.

- Default lights are not supported in DR mode and do not render. If you need any lighting in the scene, you should add it explicitly. The default system temp folder, usually `C:\Users\<username>\AppData\Local\Temp` on Windows (%TEMP%), is used for copying the assets if the `VRAY_ASSETS_CACHE_PATH` [environment variable](#) is not set. V-Ray DR can be run automatically as a Windows service whenever the machine boots up. For more information, see [Set Up V-Ray Render Service](#).
- If you see a 3ds Max window flashing on the taskbar and then disappearing, right-click on the V-Ray DR spawner icon in the taskbar tray, select Exit to close the DR spawner, and try running a regular Backburner job with this machine as the server. After that, try to start the V-Ray DR spawner again.
- For a troubleshooting guide, visit the [Distributed Rendering Troubleshooting Guide](#).