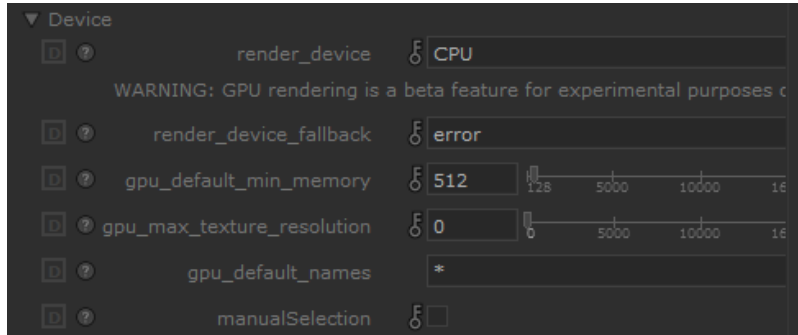


# Device



The Nvidia GPU-based denoiser is available by simply adding an output channel with the same name as another but with a unique name (e.g. "\_denoise" appended to the end) and the denoise checkbox ticked. It renders at the same time as the regular AOV of the same name.

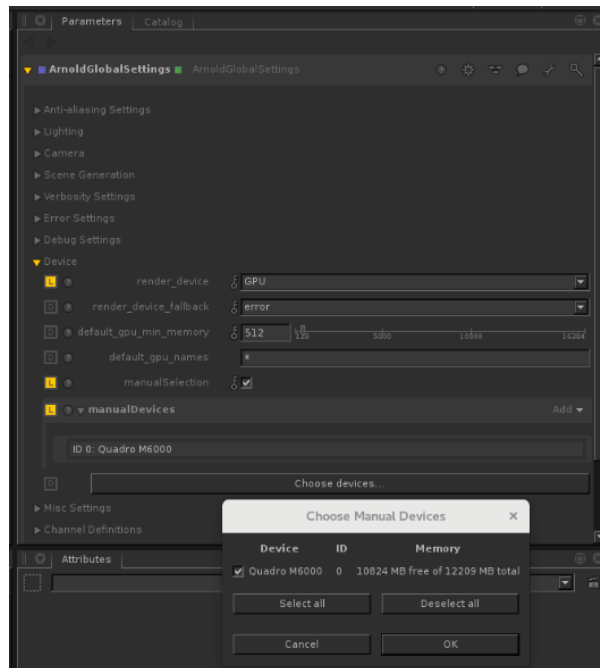
## Render Device

Choose between rendering with CPU (default) or GPU.

**! When rendering with GPU you must ensure that you are using the correct version of the NVIDIA drivers as stated in the release notes.**

**i** Information on getting started with GPU with Arnold can be found [here](#).

If you have only one Nvidia-based GPU it should automatically select it. You may switch between GPU and CPU during live rendering, but it is recommended to start with GPU so that it can get the scene properly set up internally. After that, switches should be fast and easy to compare the two. You may also manually select your GPU, and in so doing see its available memory:



## Render Device Fallback

Choose to switch to rendering with CPU when encountering an error. The default behavior stops the rendering process and produces an error message.

## Automatic Device Selection

Automatic is the default. It can be used to select specific GPU cards (useful when submitting to a farm).

#### GPU Names

A regular expression string used when automatically selecting GPUs by name (supports both glob and RegEx). For example, out of this list of GPUs:

**Quadro 6000, Titan V, Titan X, GeForce 1080, GeForce 970.**

The expression:

**Titan [A-Z]\***

Will select all of the Titan cards i.e.

**Titan V, Titan X.**

#### Min memory (MB)

The minimum free memory for a GPU to have available to be selected when automatically selecting GPUs. Depending on the scene size, you may have to lower the Min memory. This is also dependant on how much memory you have on your GPU. The default settings act on the side of caution and won't use your GPU if you have less than 512MB available. This is so that all GPU resources aren't used or worse try to use more memory than is available on the GPU. Users should change this parameter at their own risk.

## Manual Device Selection (Local Render)

Manually choose which GPU device to use from your local machine. This affects GPU rendering and OptiX denoising.



You can use `CUDA_VISIBLE_DEVICES` (environment variable) to limit which GPUs Arnold (and any other Cuda based application) can see.



You cannot mix RTX and non-RTX graphics cards in the same render.

## GPU Settings

### Max Texture Resolution

This option clamps the resolution on mipmapped textures.