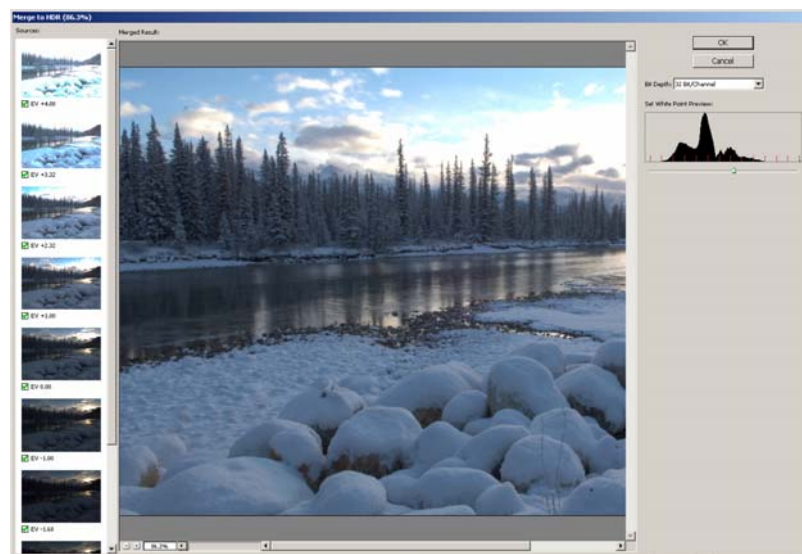
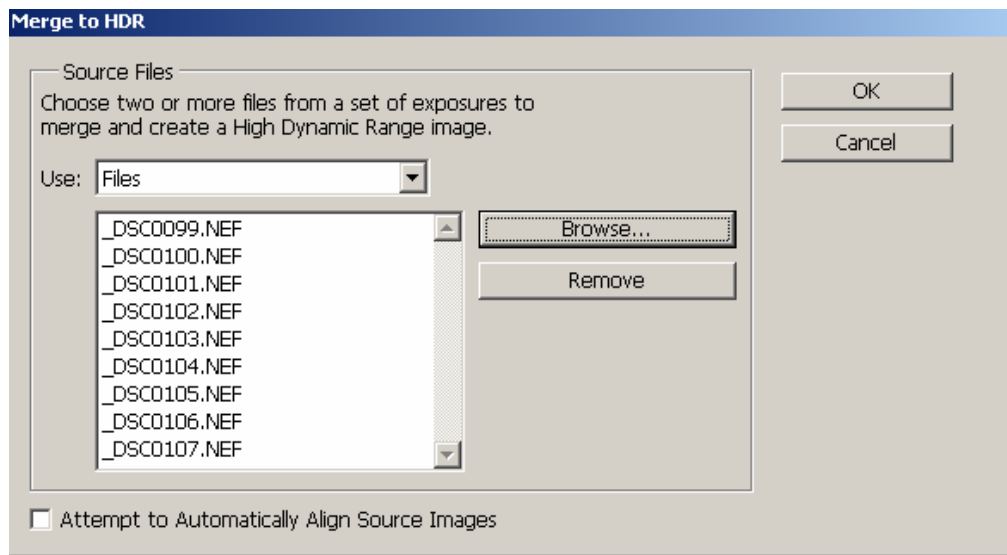


Merge to HDR using Photoshop CS2 - by Robert Berdan

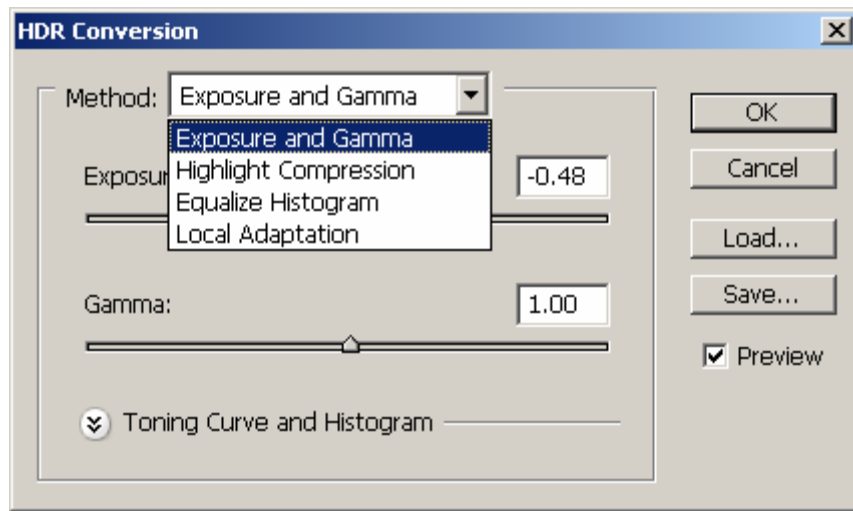
Merge to HDR (high dynamic range) involves taking several shots of the same scene using a camera mounted on a tripod and varying the exposures. For example you might set your camera EV to -4, -3, -2, -1, 0, + 1, +2, +3, +4, F-stops to create a series of 9 exposures from the same spot bracket in full 1 F-stop values. You only need do this with scenes that have very wide dynamic ranges that exceed 8.5 F-stops for example interior of home with large windows where you want to show both the inside and outside. Another example would be shooting directly into the sun. Velvia slide film has a dynamic range of about 5.5 F-stops, most digital cameras about 8.5 stops. To merge multiple images varying in exposure here are the steps for Photoshop CS2. The technique can be applied to .jpg or RAW files.

1. Choose File>Automate>Merge to HDR or in Bridge choose Tools>Photoshop>Merge to HDR (jump to step 3 if using Bridge)
2. In the Merge to HDR dialog box, click Browse, select the images and click OK.



3. Click OK again when you see the menu with each image on the left and the main window with the full 32 bit dynamic range photo. Note this image will appear flat because it exceeds the display capabilities of most monitors.

4. To convert from 32 bit to 16 bit Select Image>mode>16 bit and you will see the following pop up menu.



5. You have several controls

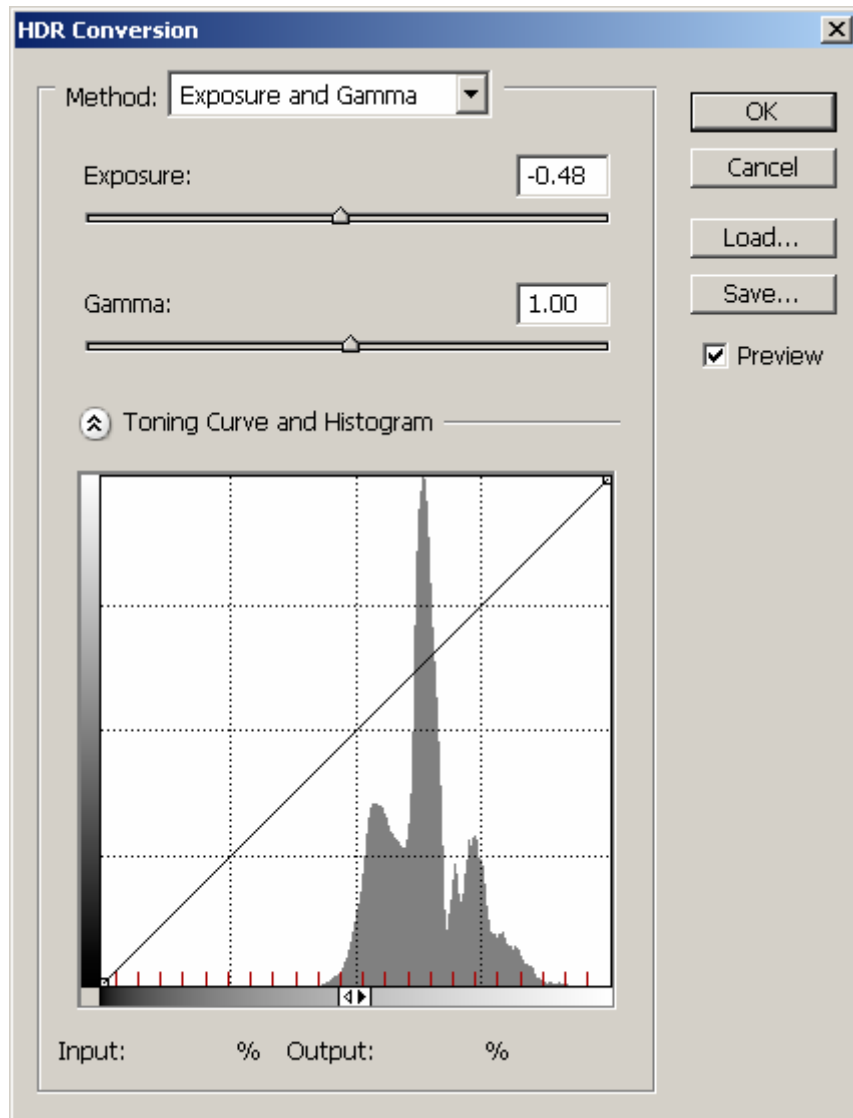
Exposure and Gamma – let you manually adjust brightness and contrast of the HDR image

Highlight Compression - compresses the highlight values in the HDR images so they fall within the luminance values range of 8 or 16 bits per channel image file. No further image adjustments are necessary; this method is automatic.

Equalize Histogram - compress the dynamic range of the HDR image while trying to preserve some contrast – no further adjustments are necessary.

Local Adaptation – Adjusts the tonality of the HDR image by calculating the amount of correction necessary for local brightness regions throughout the image.

Optional Click the arrow to view Toning Curve and Histogram



You can 1) Choose exposure and Gamma – move the exposure slider to adjust the gain and move the gamma slider to adjust contrast (do neither with the images I supply).

2) chose Local Adaptation, move the Radius slide to specify the size of the local brightness regions (set to 88 px) set threshold slide to 23.15 with these images. This specifies how far apart two pixels tonal values must be before they are no longer part of the same brightness region. You can also use the toning curve to make adjustments – pull it up or down.

The resulting image may be too dark or too light - use your basic workflow 1) adjust tonal levels. 2) Boost the Hue & Saturation.3) Adjust shadow\highlights 4) Burn & Dodge 5) Use unsharp Mask -6) Change the image to 8 bit mode Image > Mode> 8bits per channel and save as a .tif file.



This image is the result of combining 9 separate exposures. A neutral density grad filter darkened the sky but resulted in burned out highlights in regions where the river reflected the sun's light. The HDR image was able to capture detail in the water and in the clouds around the sun.



BW image taken with a 2 F-stop neutral density hard edge grad filter, note the lack of detail in the river.