



Capture NX-D Reference Manual for Version 1.4.5

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Save where otherwise stated, illustrations are from Windows 10. Default camera and software settings are assumed.

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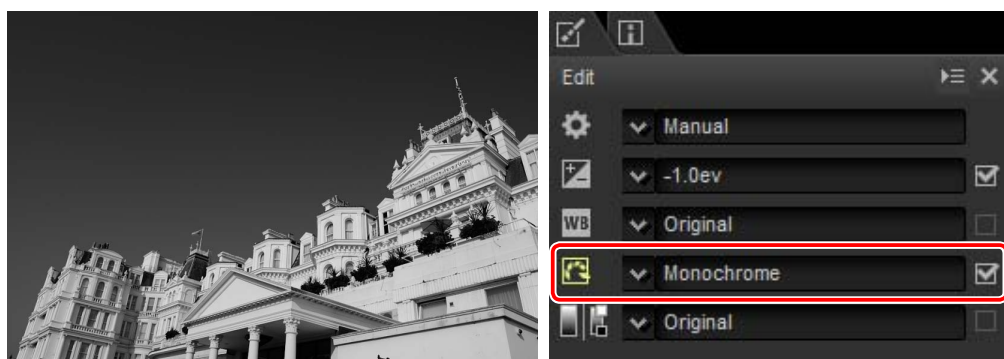
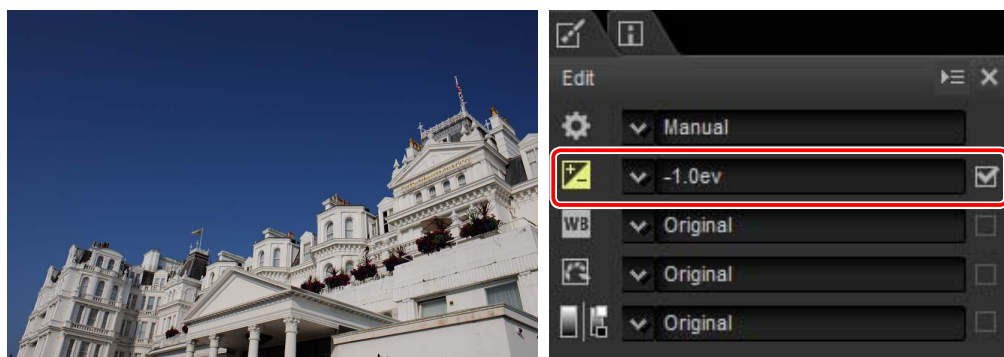


What Capture NX-D Can Do for You

Capture NX-D lets you fine-tune pictures by, for example, adjusting brightness and hue, and can also be used to edit RAW images taken with Nikon digital cameras and save them in other formats.

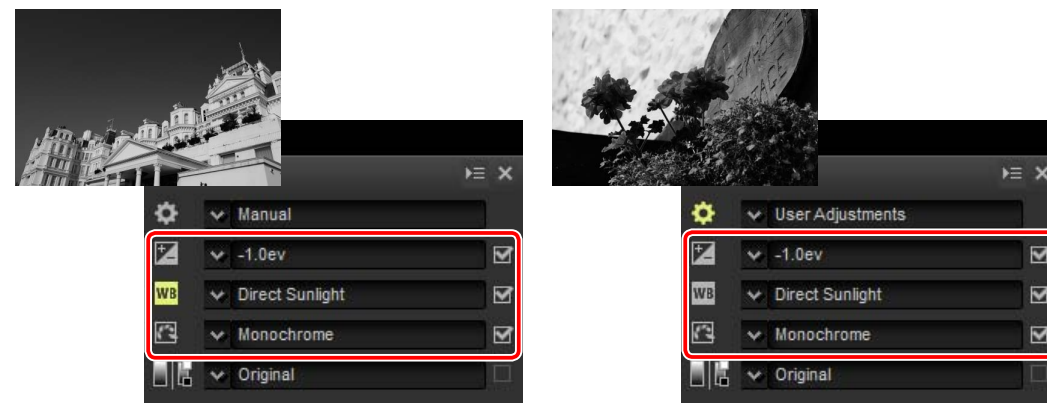
Fine-Tune Pictures

With Capture NX-D, it's easy to adjust such settings as brightness and white balance (page 18). Certain settings, such as exposure compensation and Picture Controls, are available only with RAW images.



Copy Adjustments

Save adjustments and apply them to other images (page 33) or copy them to other computers (page 35). Saved adjustments can be applied to multiple images using batch processing (page 40).



Save Pictures in Other Formats

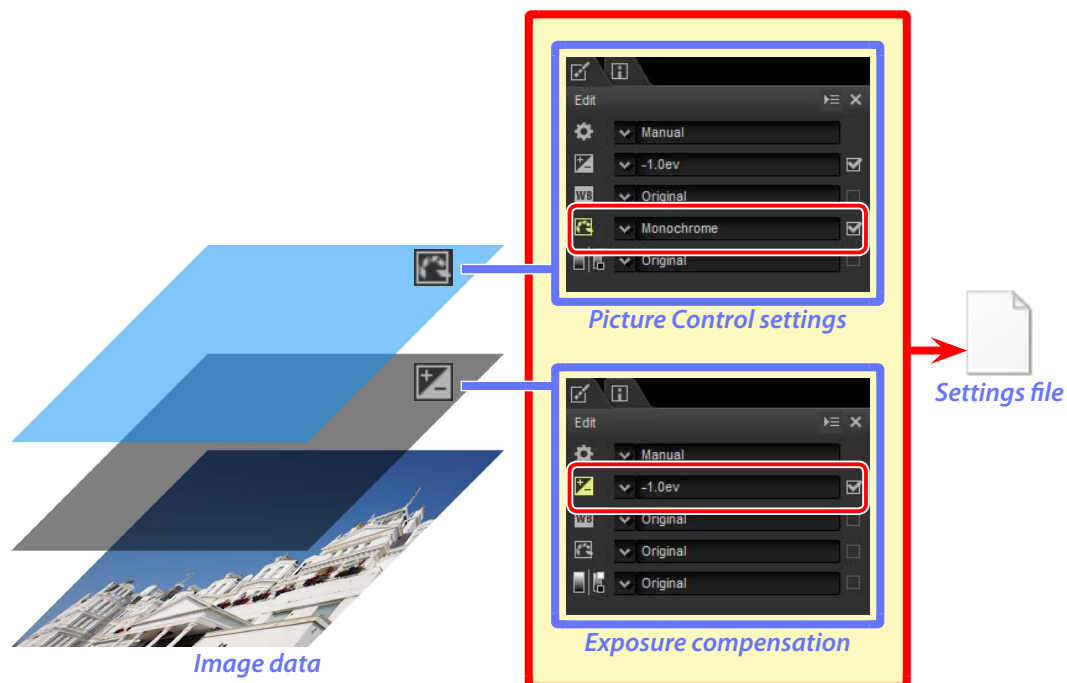
Fine-tuned or processed RAW (NEF/NRW) images can be saved in JPEG or TIFF formats for use in other applications (page 36).



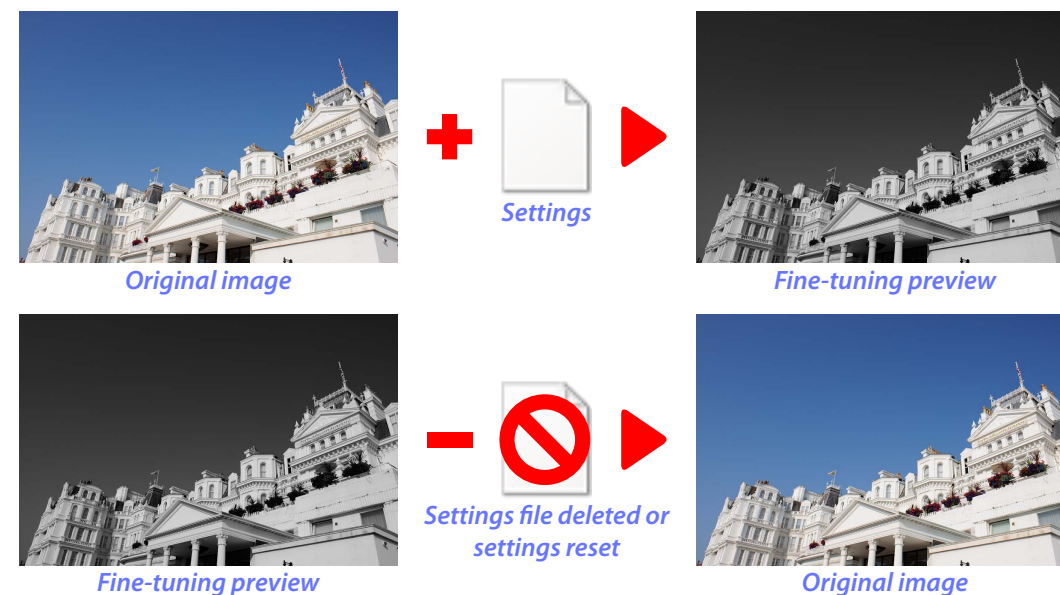


Fine-Tuning Pictures in Capture NX-D

Capture NX-D stores image adjustments in a separate “sidecar” file that is updated automatically as settings are changed.



Because changes to settings are stored separately from the original image data, the original picture can be restored at any time with no drop in quality.



When files are converted to JPEG or TIFF, the changes are applied to the image as it is saved to create a new, modified image data file.

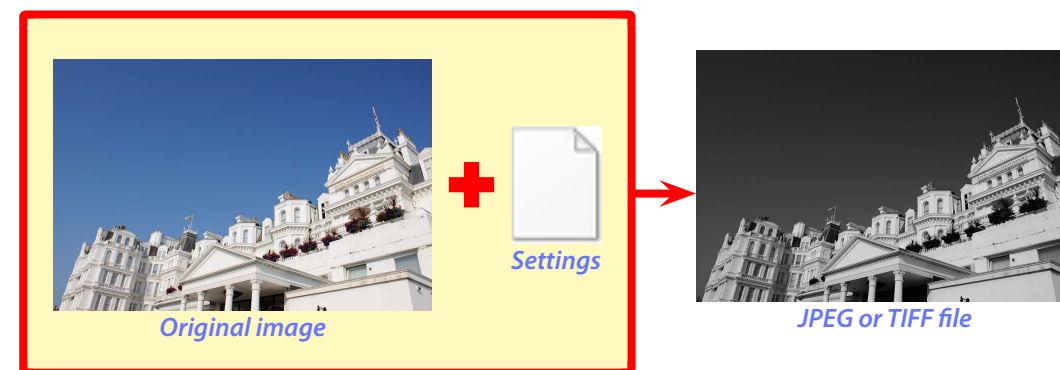




Image Adjustments

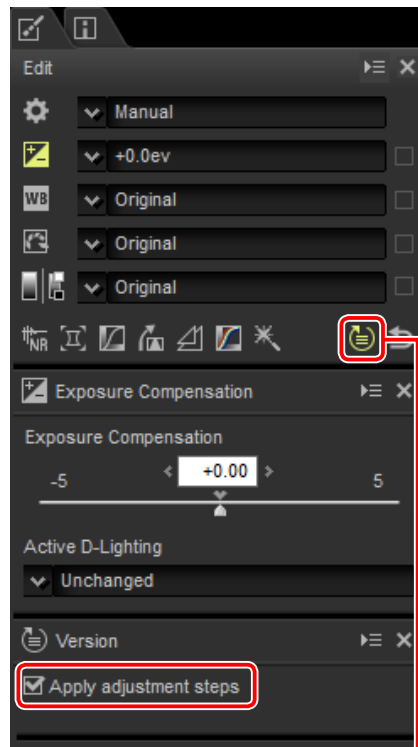
Image adjustments are stored in a “NKSC_PARAM” folder in the same folder as the original image. All changes will be lost if this folder or the image adjustment file is deleted; similarly, because the image and the image adjustment file are linked via the file name, changes will be lost or applied to another image if the image adjustment file is renamed.

When opening images modified in ViewNX-i, Capture NX-D also reads the associated settings files and preserves the adjustments they contain.



Hiding Changes Made in Capture NX/Capture NX 2

Capture NX-D can be used in combination with Capture NX and Capture NX 2. To hide changes made using Capture NX or Capture NX 2, click the  button in the edit palette ([page 7](#)) to display the **Version** tool and deselect **Apply adjustment steps**. This applies only to modifications made using the tools in the “Enhancement Steps” (Capture NX) or “Adjust” section (Capture NX 2); images modified using these tools are indicated by  icons in the thumbnail list.



Version

■ Apply History Setting

The image below has been modified using the **Picture Control** tool in the “Develop” section and the **Gaussian Blur** tool in the “Adjust” section of Capture NX 2. Deselecting **Apply adjustment steps** in Capture NX-D hides only the effects of the “Gaussian Blur” tool.




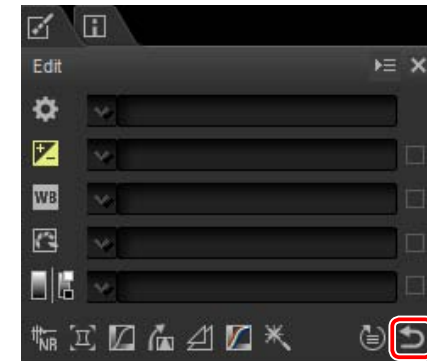
Apply adjustment steps:



Apply adjustment steps:

■ Unsupported Images

Images that have been modified using the Color Efex Pro plugin for Capture NX or Capture NX 2 can be fine-tuned in Capture NX-D by first resetting all changes using the revert button in the edit palette ([page 7](#)). Pictures that have been modified using Color Efex Pro are indicated by  icons in the thumbnail list.



Revert button

RAW (NEF/NRW) Images

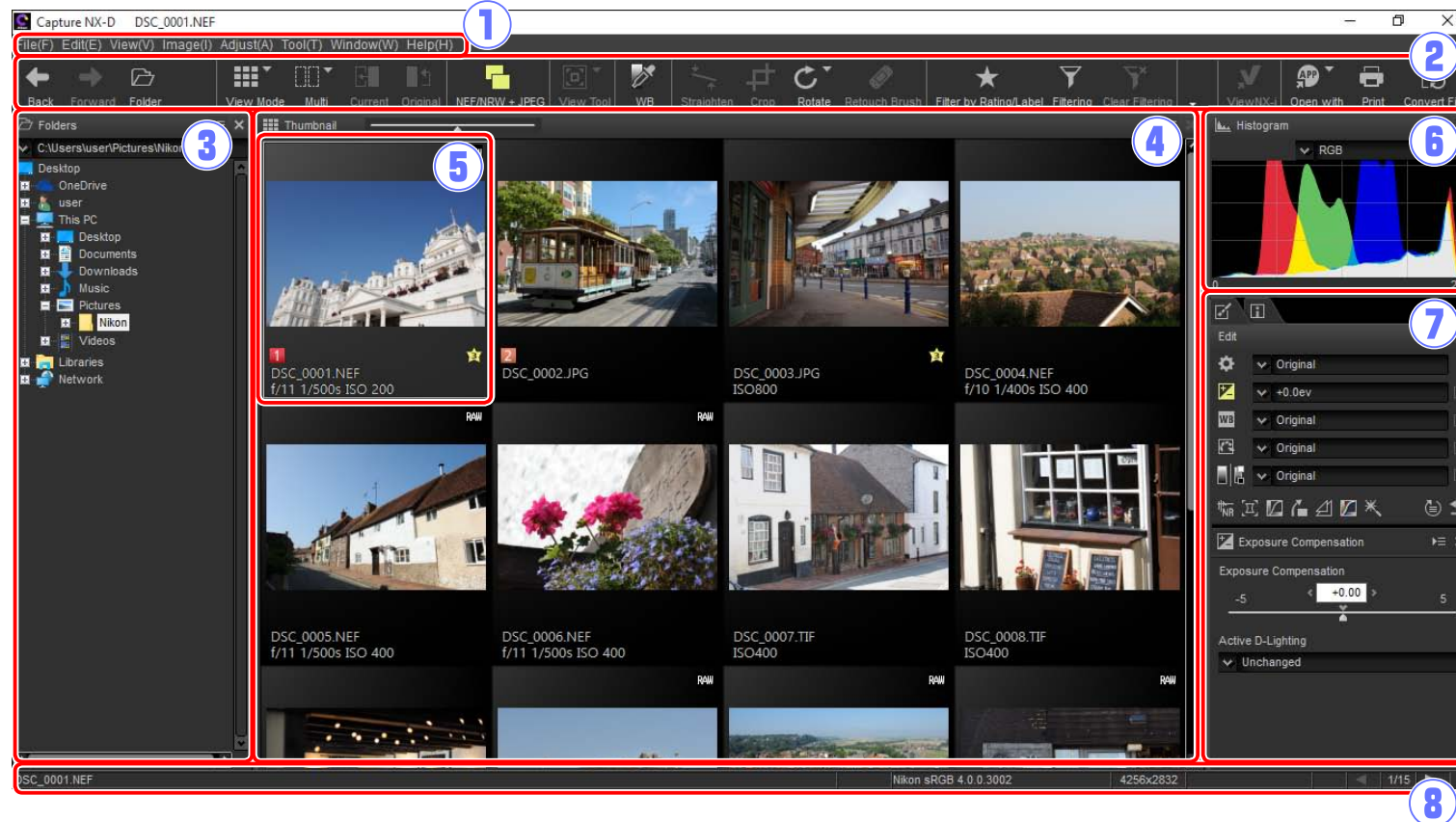
Changes made to RAW (NEF/NRW) images in Capture NX-D, including those made using the revert button, are not reflected in Capture NX or Capture NX 2. RAW (NEF/NRW) images opened in Capture NX or Capture NX 2 will be restored to the state they were in when they were last saved in these applications, regardless of any changes made in the interim using Capture NX-D.

NEF Conversion

JPEG or TIFF images converted to NEF in Capture NX or Capture NX 2 are treated as JPEG or TIFF images in Capture NX-D and can not be modified using options such as exposure compensation ([page 20](#)) and white balance ([page 21](#)) that apply only to RAW (NEF/NRW) images.



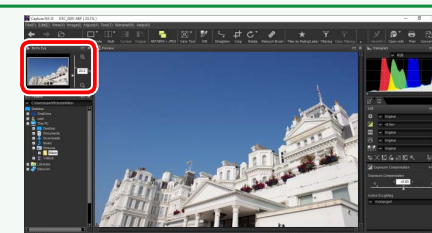
The Capture NX-D Window



- 1** **Menu bar:** Access the menus (page 9).
- 2** **Toolbar:** Choose a view and access image adjustment tools (page 8).
- 3** **Folder palette:** Select a folder to display its contents in the image area (page 6).
- 4** **Image area:** View the images in the current folder.
- 5** **Selected image:** Selected images are highlighted in gray, with images that have been modified indicated by a icon at the top left corner of the thumbnail. Double-click to preview (page 10).
- 6** **Histogram palette:** View the tone distribution for the selected image (page 6).
- 7** **Edit/metadata palettes:** Fine-tune images using the tools in the edit palette or switch to the metadata palette to view image information (page 7).
- 8** **Status bar:** View information on the selected image (page 9).

The Navigation Palette

A navigation (bird's eye) palette (page 6) appears when a preview is displayed by double-clicking a thumbnail in the image area.



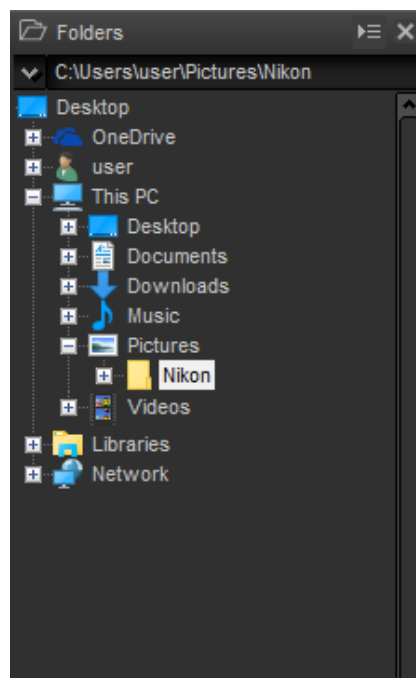


Palettes

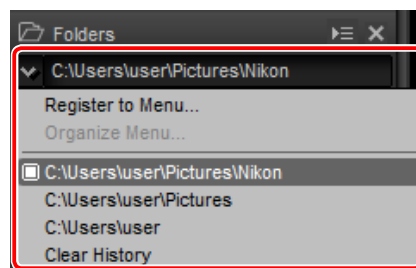
Capture NX-D offers the following palettes.

The Folder Palette

The folder palette lists the folders in the computer's storage system. Click a folder to view the images it contains in the image area or preview display.



The folder palette menu gives access to recent folders. Frequently-used folders can be added to and then accessed from this menu.



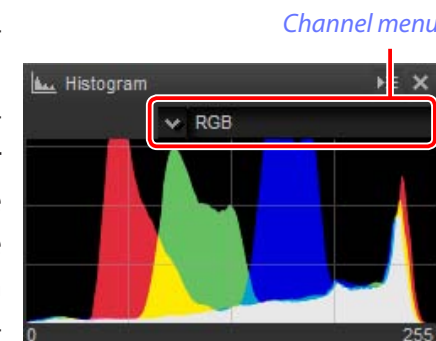
Folder palette menu

Palette Menus

To access the palette menu, click the triangle (☰) at the top right corner of the palette. Select **Undock** to open the palette in a floating window that can be moved freely about the display.

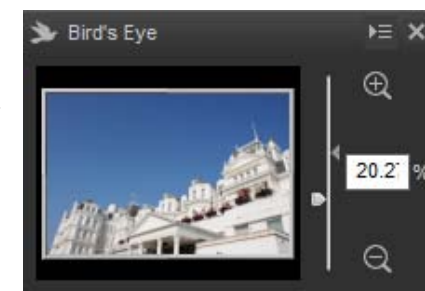
The Histogram Palette

The histogram palette provides a constantly updated histogram for the selected thumbnail or the image in the preview display. The histogram shows the tone distribution for the color channel selected in the channel menu. Choose **RGB** to view overlapping distributions for the red, green, and blue channels: tone ranges in which the distributions for red and green overlap are shown in *yellow*, those in which red and blue overlap in *magenta*, those in which green and blue overlap in *cyan*, and those in which all three colors overlap in *white*.

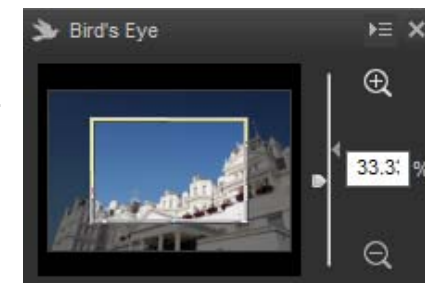


The Navigation (Bird's Eye) Palette

The navigation palette is displayed above the folder palette when you double-click a thumbnail to display a preview. To zoom the preview in and out, click the and buttons, use the slider, or enter the desired zoom ratio in the text box.



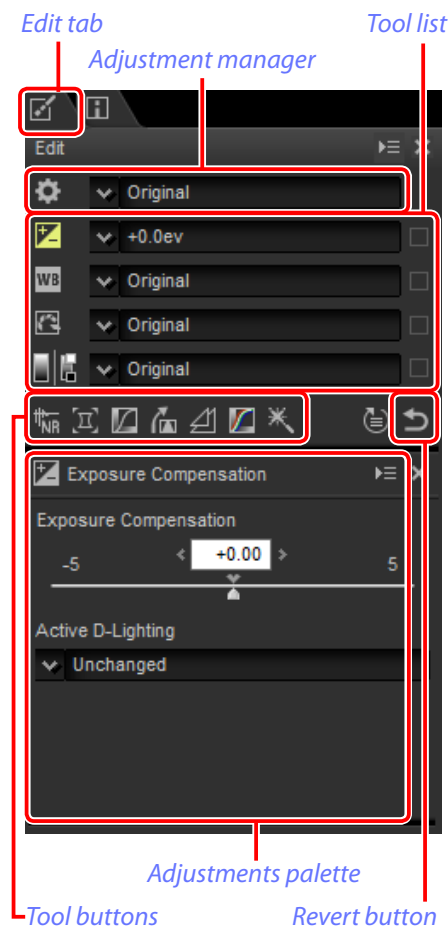
When the preview is zoomed in, the frame in the navigation palette shows the area currently displayed. Drag the frame to view other areas of the preview.





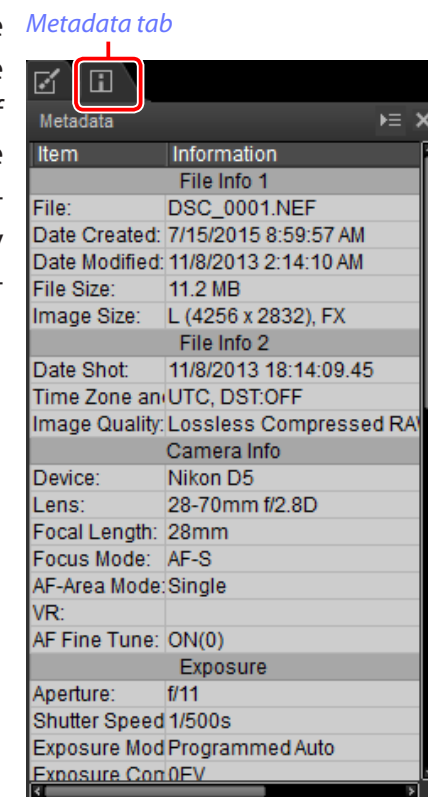
The Edit Palette

Use the tools in the edit palette to adjust the image currently selected or previewed in the image area. The *tool list* ([page 18](#)) offers **Exposure Compensation**, **White Balance**, **Picture Control**, and **Tone/Tone (Detail)** tools that can be accessed via pull-down menus or by clicking the tool icon and adjusting settings in the *adjustments palette* ([page 18](#)). Additional tools can be accessed using the *tool buttons* ([page 19](#)) at the bottom of the palette. The *adjustment manager* tool ([page 19](#)) can be used to copy adjustments to other images or save current settings for later use. To reset all tools and restore the image to the state it was in when first opened in Capture NX-D, click the *revert button* (note that any changes made to JPEG and TIFF images in other applications since they were last opened in Capture NX-D will not be reset).



The Metadata Palette

The metadata palette lists information on the image currently selected or previewed in the image area, including exposure, the model of camera used to record the picture, and the date and time of recording. The metadata palette can be displayed in the position normally occupied by the folder palette ([page 6](#)) by selecting **Dock to Left** in the palette menu.



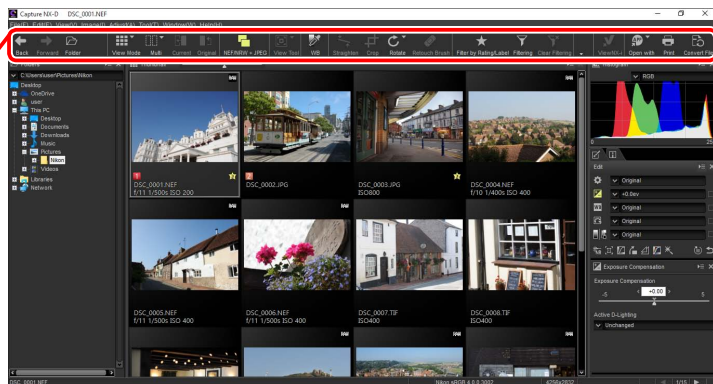
The Edit and Metadata Palettes

Use the tabs at the top left corner to switch between the edit and metadata palettes.



The Toolbar

Use the toolbar to choose a view and access image adjustment tools.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

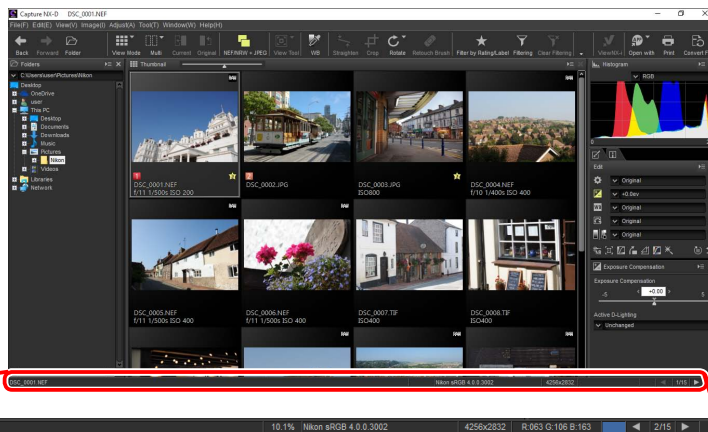
①	Back/Forward	Select the folder before or after the current folder.	—
②	Folder	Display a dialog where you can navigate to and open a folder.	Page 6
③	View Mode	Choose a view mode for the image area.	Page 10
④	Multi	View images side-by-side. Choose from Compare Before and After Images and 2 Images .	Page 13
⑤	Current	Apply current adjustments to the “before” image for use as a reference when making further modifications.	Page 13
⑥	Original	Restore the “before” image to the state it was in before any adjustments were made.	Page 13
⑦	NEF/NRW + JPEG	If the folder contains images shot at image quality settings of “RAW + JPEG”, select this option to list the RAW and JPEG copies separately.	Page 10

⑧	View Tool	Access the fit, image viewer, zoom, and hand tools.	—
⑨	WB	Click a point in the preview to adjust white balance so that the sampled point takes on a neutral gray color (gray point sample tool).	Page 21
⑩	Straighten	Straighten images.	Page 30
⑪	Crop	Crop images.	Page 37
⑫	Rotate	Rotate images 90°. The direction of rotation can be selected by keeping the button pressed.	—
⑬	Retouch Brush	Remove dust and scratches (auto retouch brush).	Page 39
⑭	Filter by Rating/Label	Filter images by rating or label.	Page 17
⑮	Filtering	Filter images by rating, label, or camera settings.	Page 17
⑯	Clear Filtering	End filtering and view all images.	—
⑰	Batch Process Status	View batch process status.	Page 40
⑱	Cancel Batch Process	Cancel batch processing.	—
⑲	ViewNX-i	View the current image or images in ViewNX-i. The images are displayed in their current state including any changes made using Capture NX-D and, in the case of NEF/NRW (RAW) images, without conversion to TIFF.	—
⑳	Open with	Open images in an application and format previously selected using the Open With Application option.	Page 47
㉑	Print	Print the image currently selected or previewed in the image area.	Page 42
㉒	Convert Files	Save images in JPEG or TIFF format. Adjustments are applied before the image is saved.	Page 36



The Status Bar

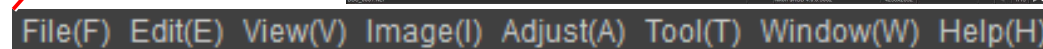
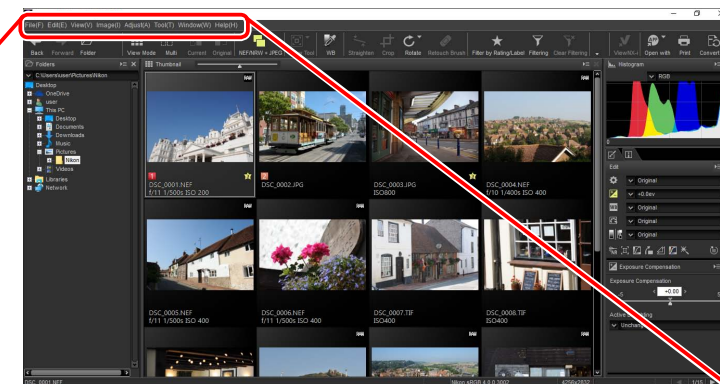
View information on the image selected or previewed in the image area.



①	DSC_0001.NEF	File name	The file name.
②	10.1%	Zoom ratio	The zoom ratio at which the preview is currently displayed.
③	Nikon sRGB 4.0.0.3002	Color space	The color space of the image in the preview display.
④	4256x2832	Image size	The size (in pixels) of the image in the preview display.
⑤	R:063 G:106 B:163	Color value	The color of the pixel under the cursor in the preview and image viewer displays.
⑥	◀ 2/15 ▶	Position in folder	The position of the current image and the total number of images in the folder. Click ◀ or ▶ to view other images.

The Menu Bar

Access image adjustment tools or save images in other formats.



①	File	Convert files to other formats, run batch processes, and print and rename files.
②	Edit	Select, copy, paste, and delete images.
③	View	Choose a view mode, adjust zoom, and sort and select images.
④	Image	Rotate, rate, and label images or display a grid or the focus point, shadows, or highlights.
⑤	Adjust	Copy, paste, save, and load image adjustment settings.
⑥	Tool	Access image adjustment tools.
⑦	Window	View and hide palettes.
⑧	Help	View online help. In Windows, this option also displays the current software version number.

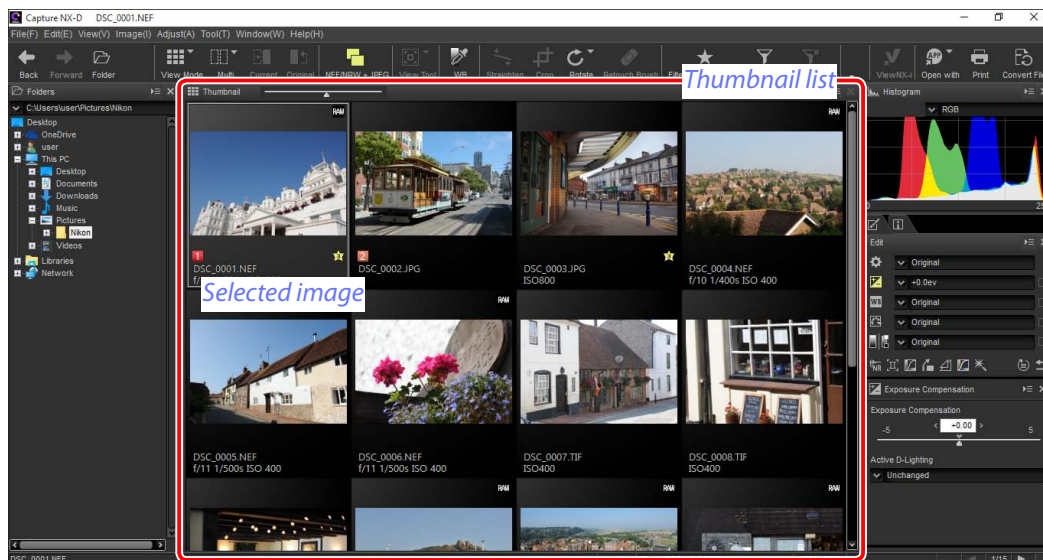


Viewing Pictures

Capture NX-D offers the following viewing options.

Thumbnails

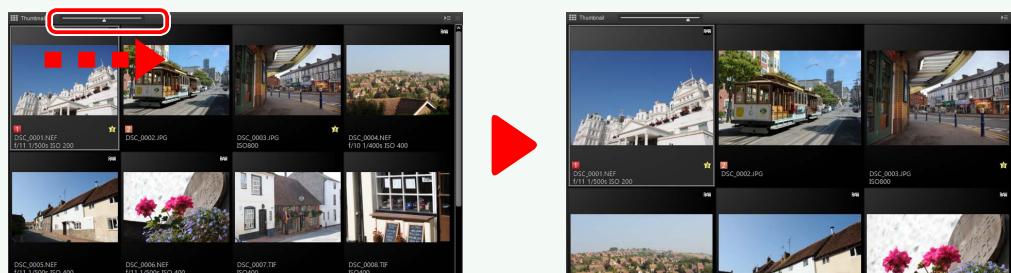
At default settings, Capture NX-D lists the images in the current folder as thumbnails. Selected images are highlighted in gray.



Thumbnail Size

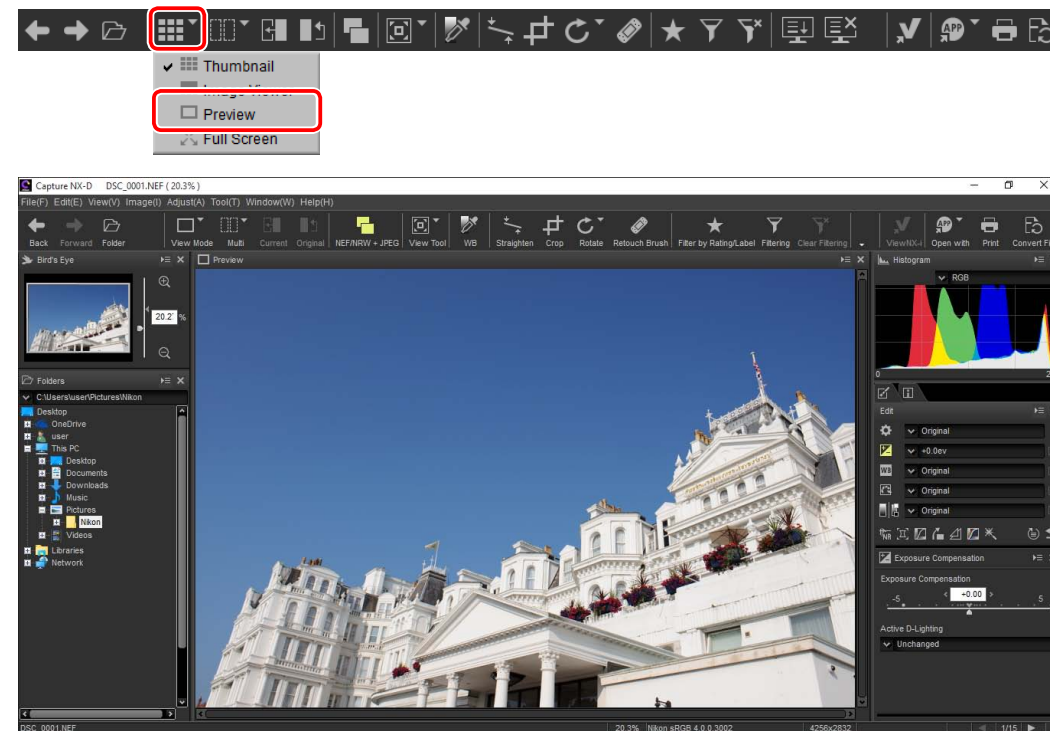
Use the slider above the image area to choose the thumbnail size.

Slider



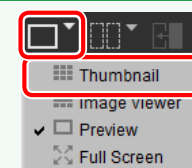
Previews

To display a preview, double-click a thumbnail, or select a thumbnail and then click the view mode button in the toolbar and select **Preview**.



Returning to the Thumbnail View

To return to the thumbnail view, click the view mode button in the toolbar and select **Thumbnail**.



Same Name, Different Extension

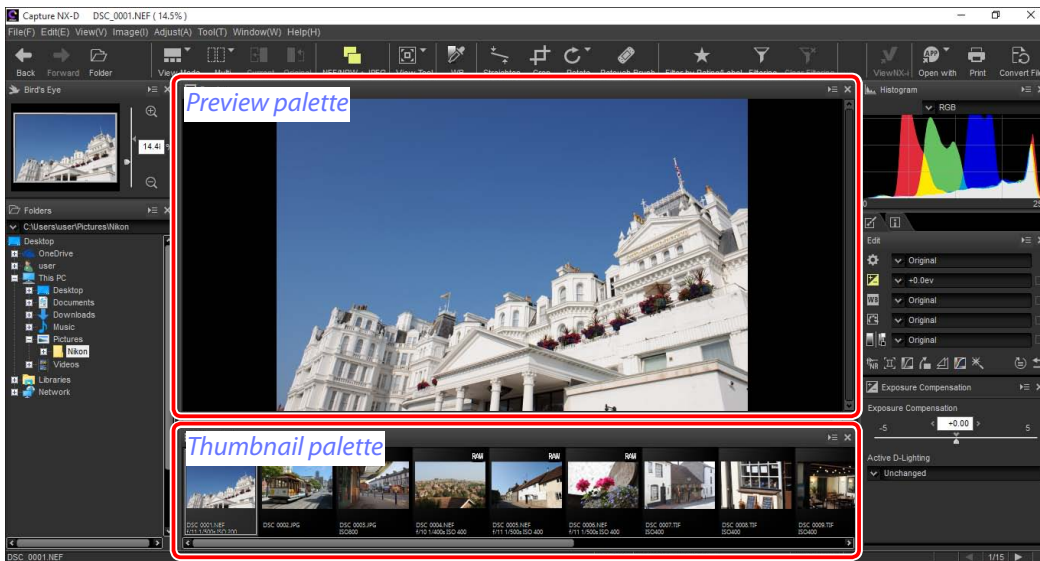
If the folder contains pairs of images with the same file names but different extensions (for example, RAW and JPEG images recorded at image quality settings of "RAW + JPEG"), only one copy of each pair will be displayed when **NEF/NRW + JPEG** is on. To view all images, turn **NEF/NRW + JPEG** off.



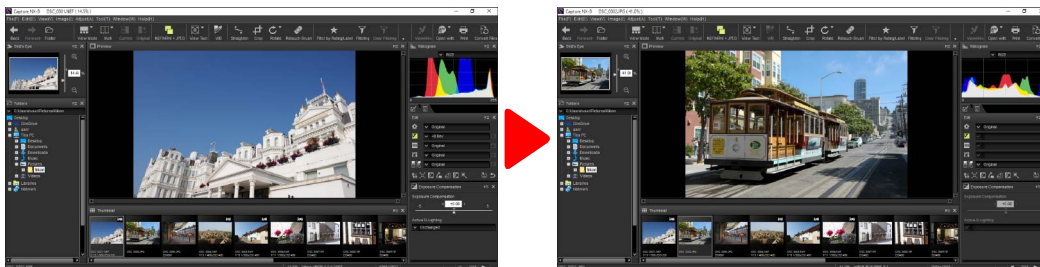


The Image Viewer

To preview the current image with thumbnails above, below, or to one side, click the view mode button in the toolbar and select **Image Viewer**.

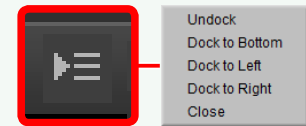


Click thumbnails to preview other images.

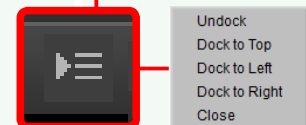
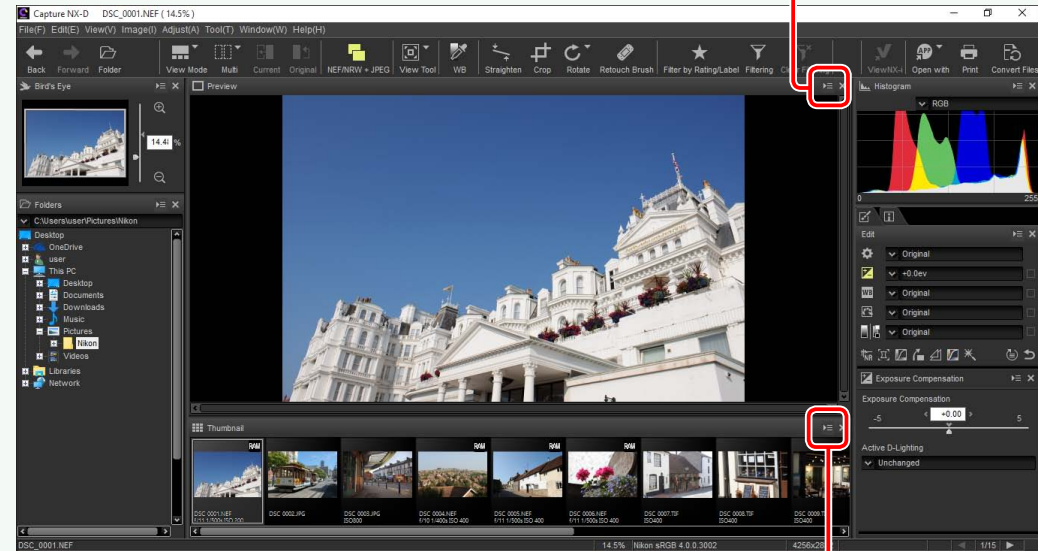


Choosing the Location of the Preview and Thumbnail Palettes

The locations of the preview and thumbnail palettes can be selected from the palette menus.



Preview palette menu

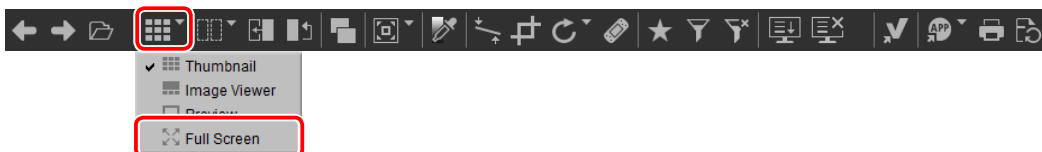


Thumbnail palette menu



Viewing Images Full Screen

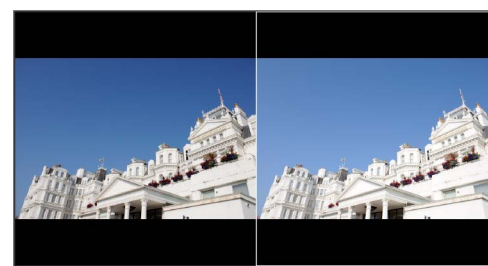
To hide the menus, toolbar, and palettes and view the current image full screen, click the view mode button in the toolbar and select **Full Screen**.



Use the left and right arrow keys on the keyboard to view additional images.




Full-screen display is also available in the multi-preview view ([page 13](#)).

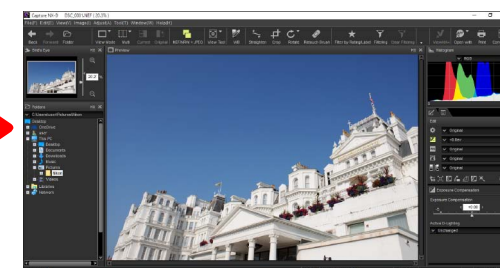
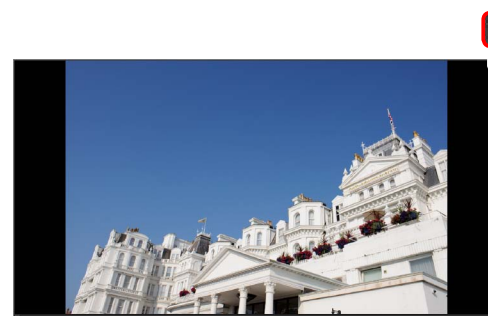


Compare before and after images



2 Images

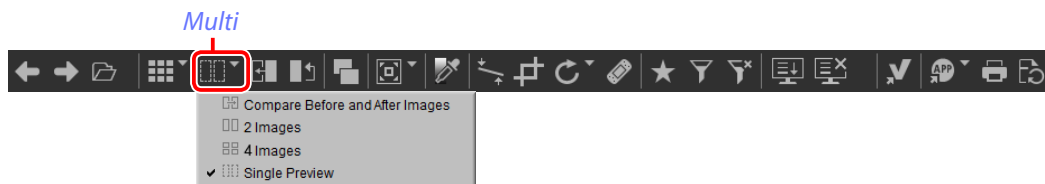
To exit the full-screen display and return to the previous view, click the  button or press the Esc key.





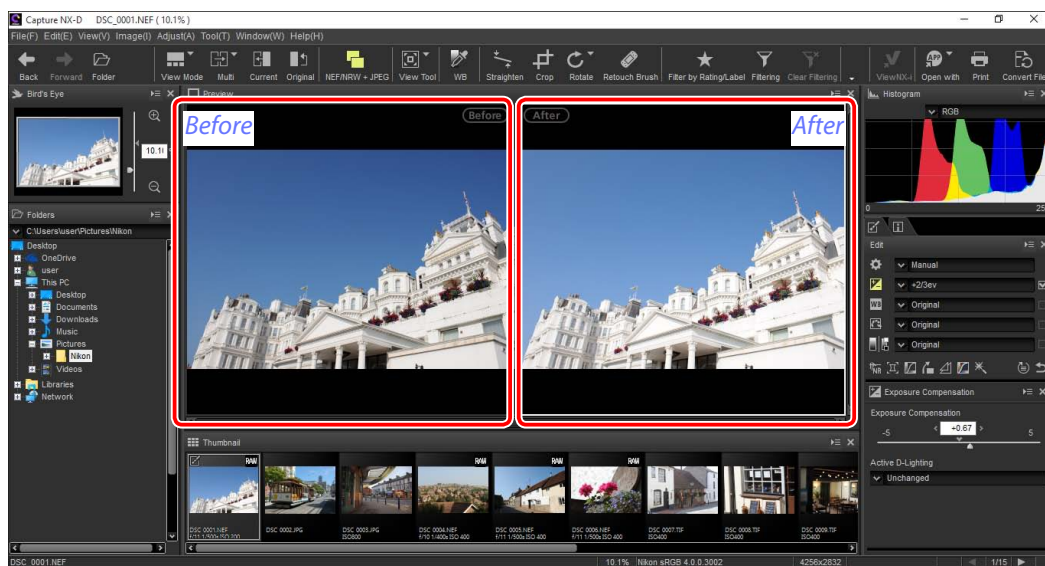
Side-by-Side Comparison

To compare images, use the “multi” tool in the toolbar. Choose **Compare Before and After Images** to compare before and after views of a single image, or **2 Images** to compare multiple images side-by-side. To exit the side-by-side comparison display, select **Single Preview**.




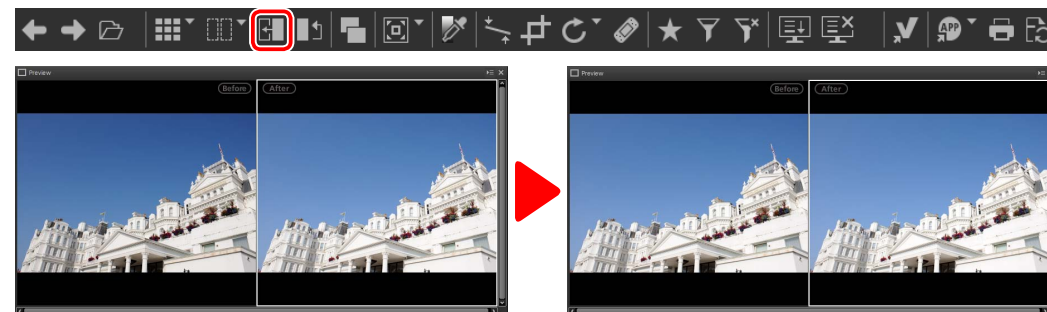
Compare Before and After Images

Compare before and after views of the current image.




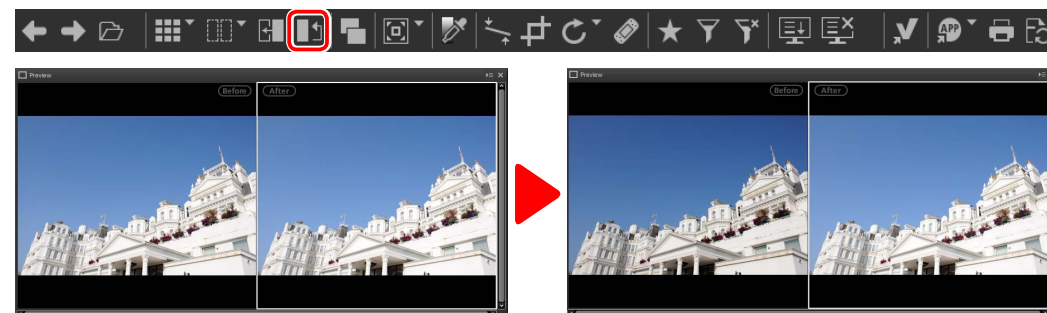
■ Updating the “Before” Image

To update the “before” image to reflect current image adjustments, click the  button in the toolbar. The “before” image can then be used as a reference for subsequent changes to image adjustment settings.



■ Restoring the “Before” Image

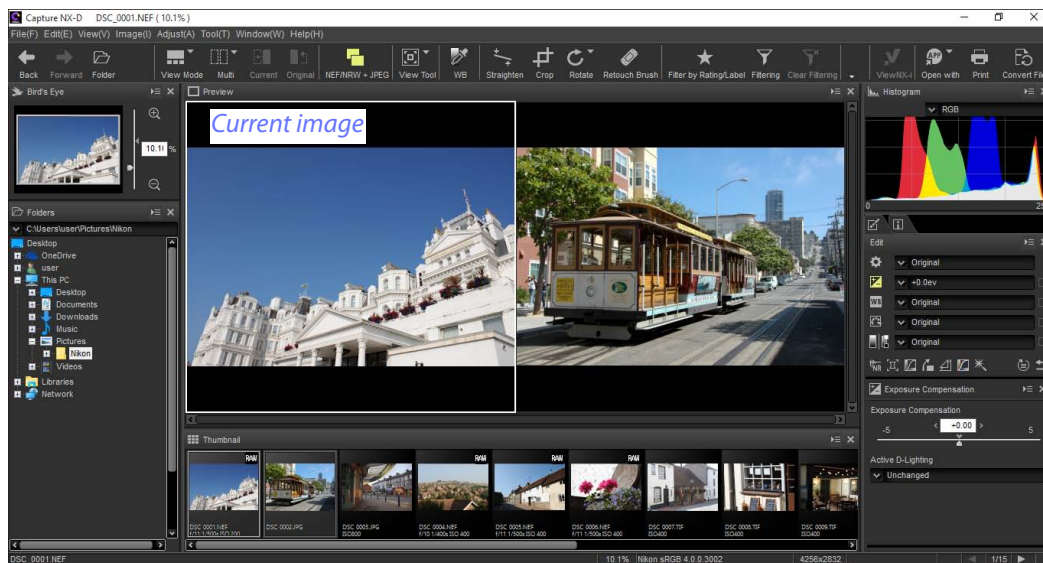
To restore the “before” image to its unadjusted state, click the  button in the toolbar. The “before” image will be restored to the state the image was in when first opened in Capture NX-D (note that any changes made to JPEG and TIFF images in other applications since they were last opened in Capture NX-D will not be reset).





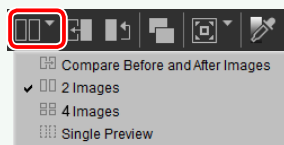
“2 Images”

Compare images side-by-side. When either image is zoomed or scrolled, the other will be zoomed or scrolled to match.

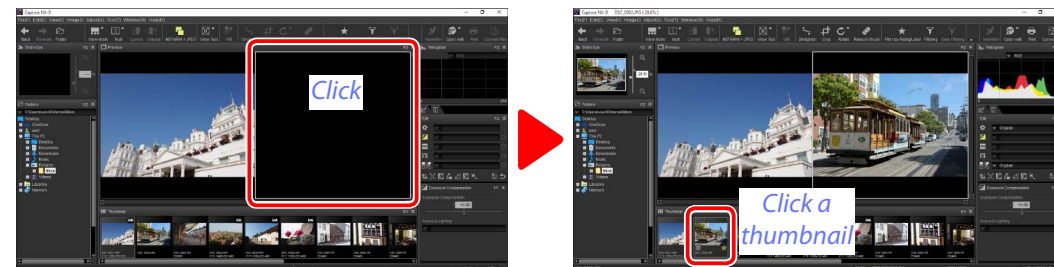


“2 Images”

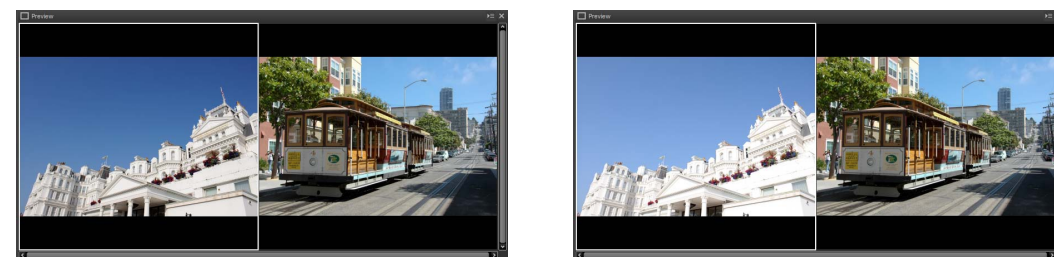
Computers with at least 4 GB of memory and 64-bit operating systems offer a choice of two- and four-image displays. The “2 images” feature on computers running 32-bit editions of Windows offers only a two-image display.



When you click the “multi” button and select **2 Images**, the current image will be displayed on the left. To select images for display, click the desired preview box and then click a thumbnail. Only images in the same folder can be selected for side-by-side comparison.

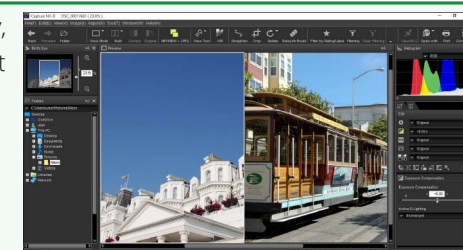


The selected preview is highlighted in white. Image adjustments apply only to the selected preview, as do the histogram and navigation palette displays.



Comparing Images in the Preview Display

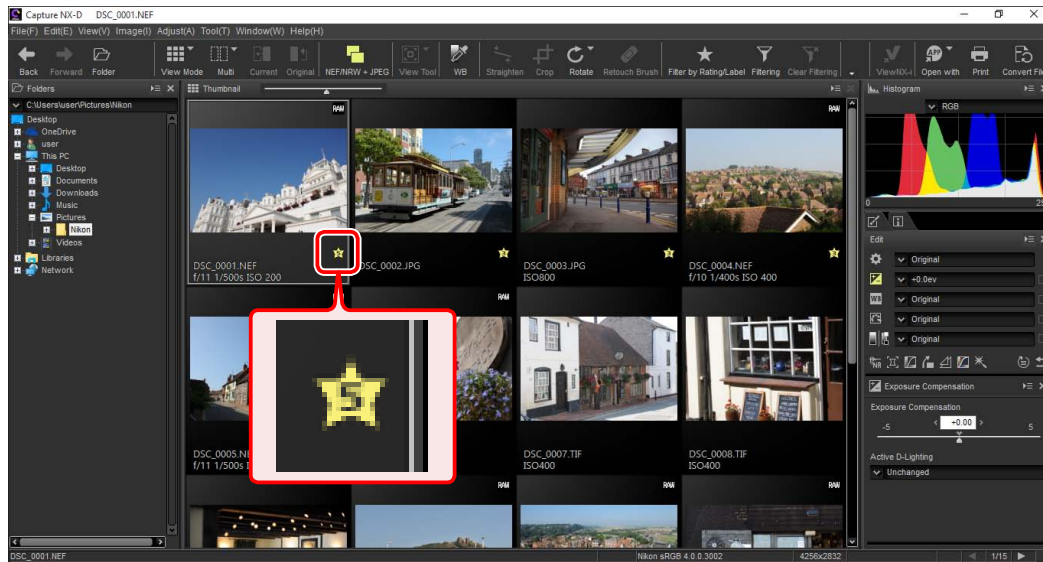
To open the images side-by-side in the preview display, click the view mode button in the toolbar and select **Preview**.





Rating

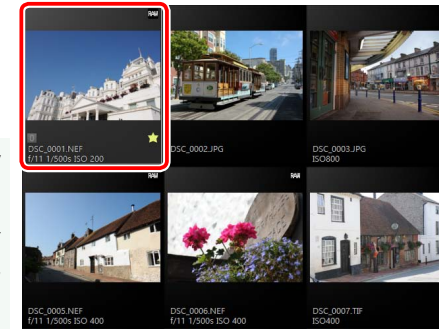
Pictures can be assigned ratings of from (no rating) to five stars.



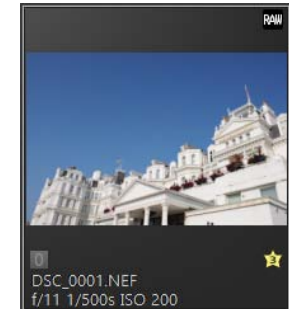
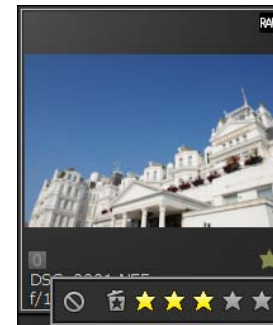
Ratings are assigned using the thumbnail rating icons or the **Apply Ratings** option in the **Image** menu.

1 Select pictures.

To select multiple pictures, keep the **Ctrl** key (or on Mac computers, the **⌘/command** key) pressed while clicking each image in turn. To select two pictures and all images between them, click the pictures while pressing **Shift**.



2 Click the icon and choose a rating of from (no rating) to five stars.



To assign the picture a three-star rating, click the third star from the left. The first three stars will be highlighted in yellow.

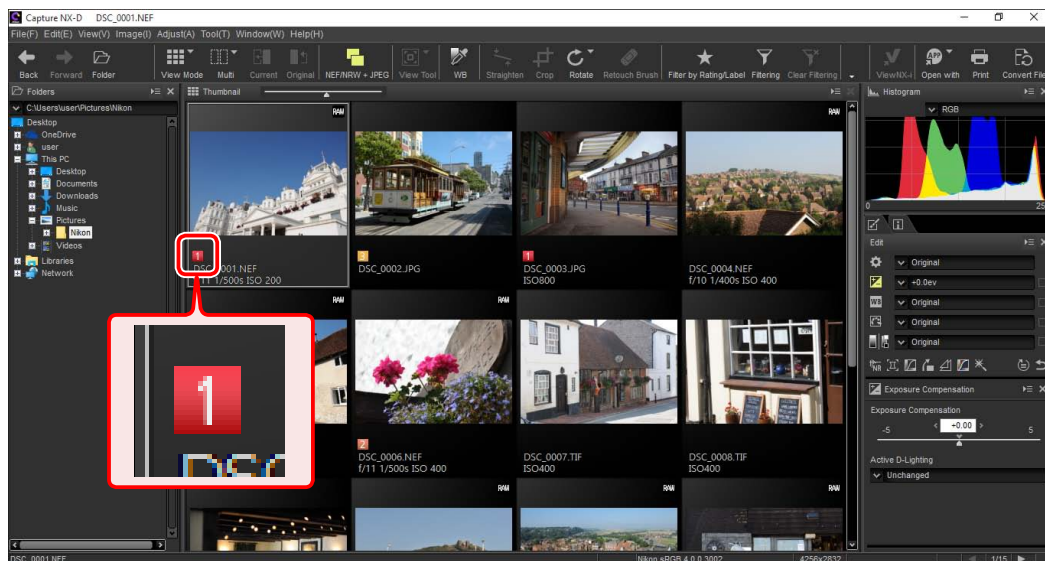
"Apply Ratings"

Selected files can also be rated using the **Apply Ratings** option in the **Image** menu.



Labelling

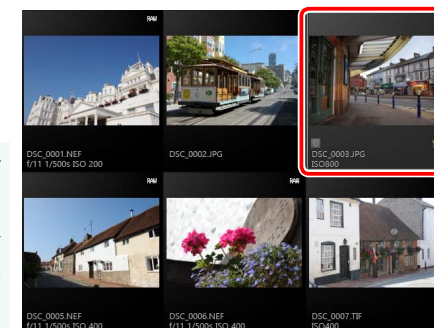
To make pictures easier to sort and locate, you can assign them labels of from “0” (no label) through “9”, each with its own unique color.



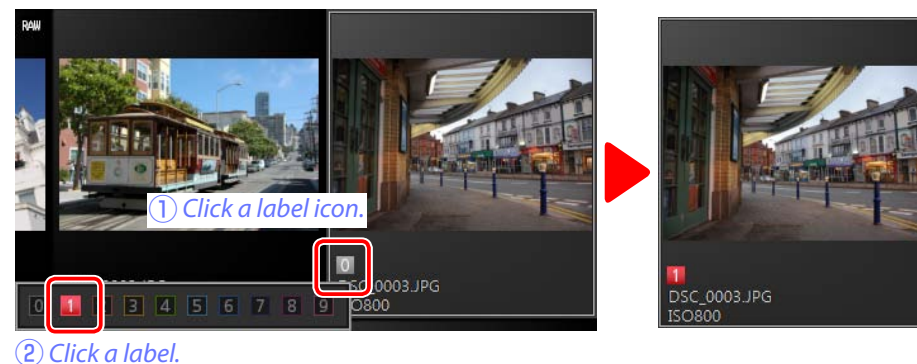
Ratings are assigned using the thumbnail label icons or the **Apply Labels** option in the **Image** menu.

1 Select pictures.

To select multiple pictures, keep the **Ctrl** key (or on Mac computers, the **⌘/command** key) pressed while clicking each image in turn. To select two pictures and all images between them, click the pictures while pressing **Shift**.



2 Click a label (1); in the case of unlabelled images, the label “0” only appears when the cursor is over the picture) and choose a label of from “0” (no label) through “9” (2).




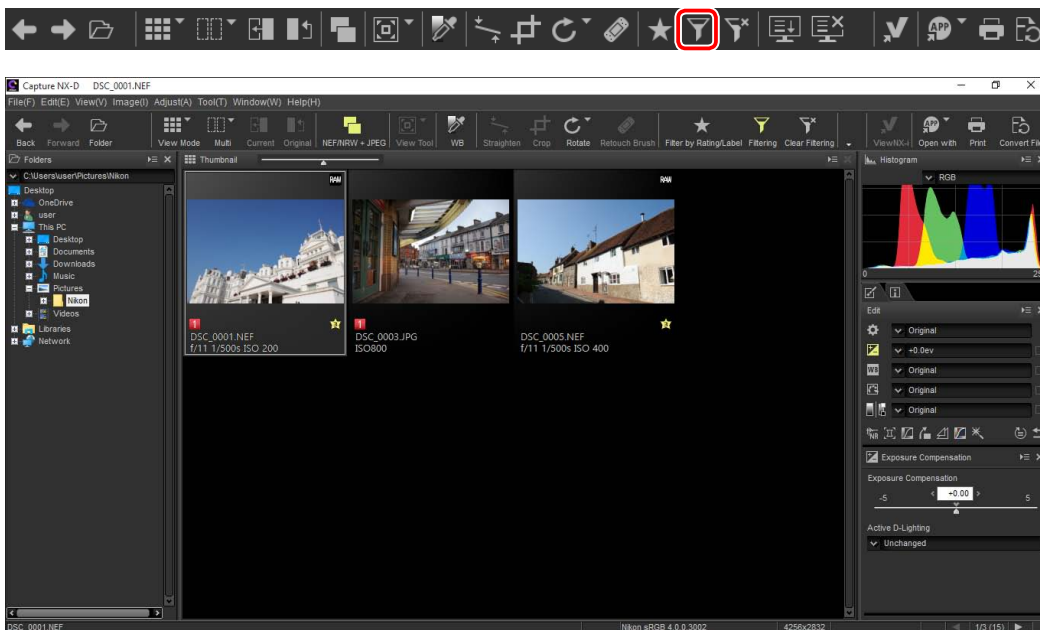
“Apply Labels”

Selected files can also be rated using the **Apply Labels** option in the **Image** menu.

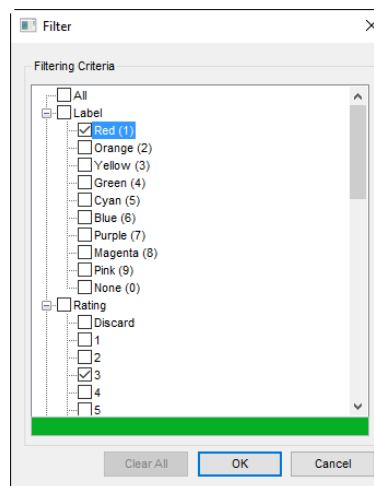


Filtering

To filter pictures using criteria such as ratings, labels, and photo information, click the  button in the toolbar.



A dialog will be displayed where you can select filters. Only pictures that match at least one of the selected criteria will appear in the thumbnail list.




Filters

The options for the **Model**, **Focal Length**, **Shutter Speed**, **F Number**, and **ISO Sensitivity** filters are restricted to values found in the images in the current folder.

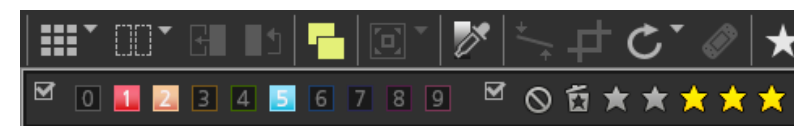
Quick Filters

Use the  button in the toolbar to quickly filter pictures by rating and label.

1 Click the  button to display the filter bar.

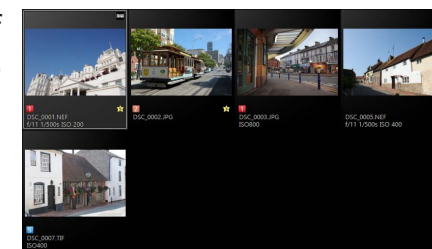


2 Choose a filter or filters from the options in the filter bar.




✓ If you select multiple ratings, all pictures with ratings in the selected range will be displayed. For example, selecting ratings of three and five stars displays pictures with ratings of three, four, and five stars.

Only pictures that match at least one of the selected criteria will appear in the thumbnail list.



Viewing All Pictures

To cancel filtering and display all pictures in the current folder, click the  button in the toolbar.





The Edit Palette

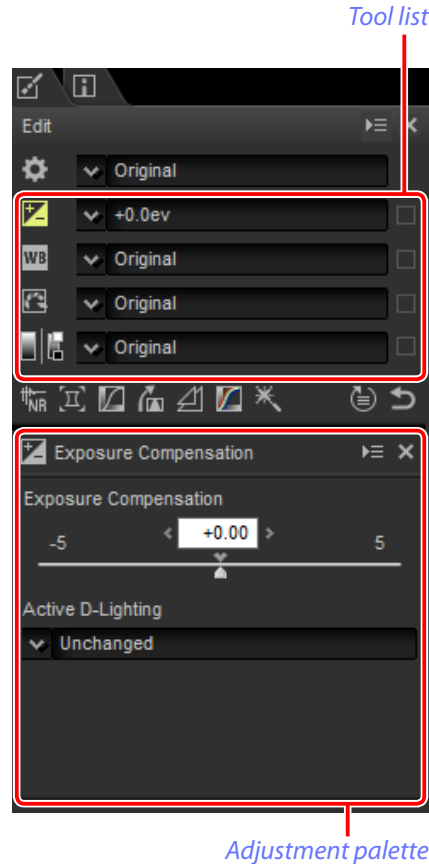
Most image adjustments are performed using the edit palette, which consists of a tool list, an adjustments palette, and tool buttons.

The Tool List

The tool list contains the items listed below. All but **Tone/Tone (Detail)** apply exclusively to RAW (NEF/NRW) images.

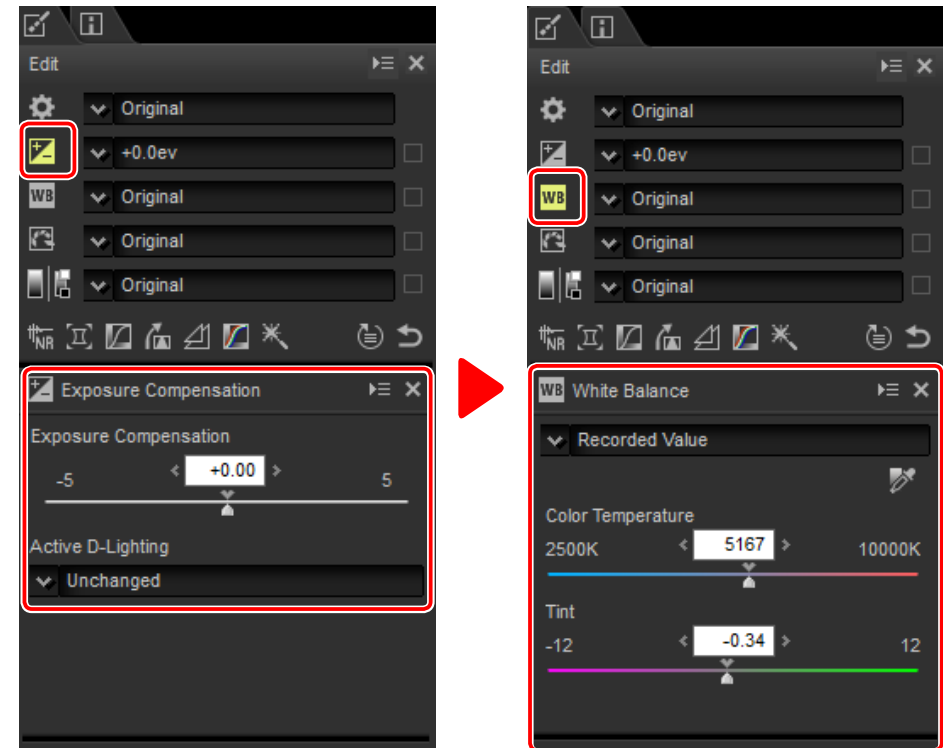
	Exposure Compensation	Page 20
	White Balance	Page 21
	Picture Control	Page 22
	Tone/Tone (Detail)	Page 24

Settings for these tools can be selected from the pull-down menus. Selecting **Original** restores settings to the values in effect when the image was first opened in Capture NX-D. At other settings, a check () appears in the box to the right of the pull-down menu, and changes can be hidden by removing the check from the box ()



The Adjustment Palette

Use the adjustment palette to make detailed adjustments. Clicking a tool button or an icon in the tool list displays settings for the selected item.



Tools that have been modified using the adjustment palette are identified by the label **Manual** in the tool list pull-down menus.



Tool Buttons

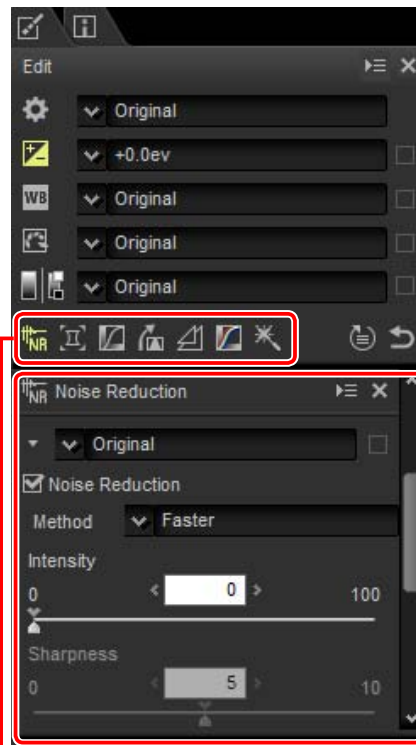
The following tools can be accessed using the tool buttons at the bottom of the edit palette. Note that some of these tools can be used only with RAW (NEF/NRW) images; for information, see the section for each tool.

	Noise Reduction	Page 25
	Camera and Lens Corrections	Page 26
	LCH	Page 28
	Straighten and Perspective Control	Page 30
	Unsharp Mask	Page 31
	Levels & Curves	Page 32
	Retouch	Page 39

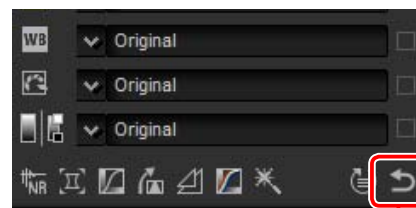
These tools are accessed by clicking the buttons and adjusting settings in the adjustment palette. The buttons for tools that have been modified from default values are highlighted in yellow (e.g.,).

The Revert Button

Click the revert (“Revert to Original State”) button to reset all tools and restore the image to the state it was in when first opened in Capture NX-D (note that any changes made to JPEG and TIFF images in other applications since they were last opened in Capture NX-D will not be reset).



Tool buttons

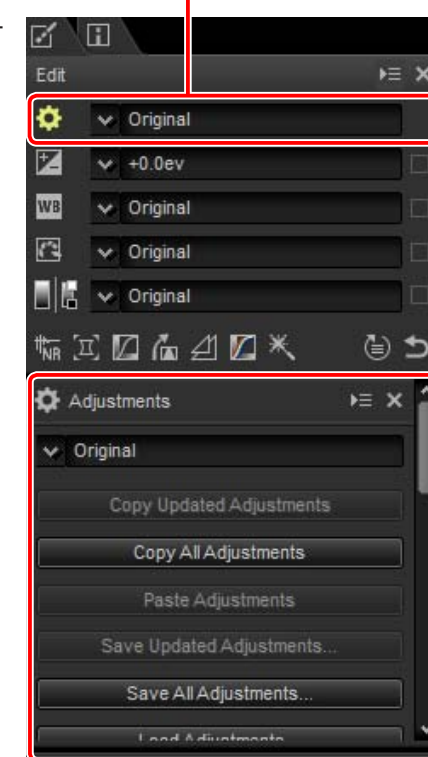


Revert button

The Adjustment Manager Tool

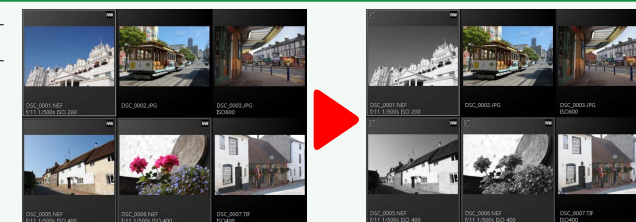
Use the adjustment manager tool to copy adjustments to other images or save current settings for later use ([page 34](#)).

Adjustment manager



Fine-Tuning Multiple Images

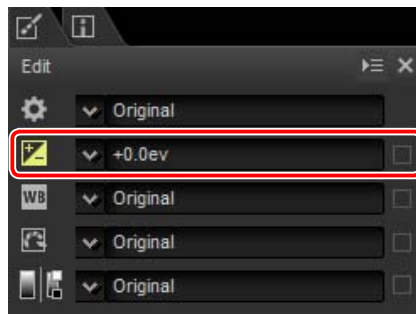
Image adjustments apply simultaneously to all the images currently selected in the thumbnail list.





Exposure Compensation (RAW Images)

Adjust overall exposure, making images lighter or darker.



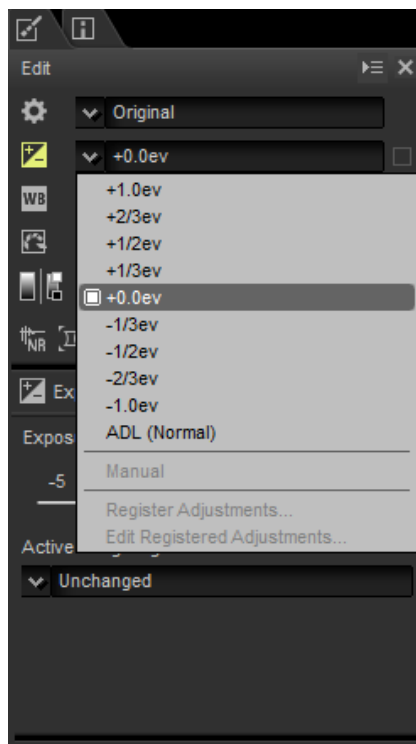
The pull-down menu in the tool list can be used to choose from values between +1.0 and -1.0 EV.



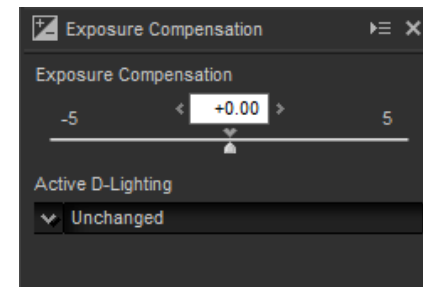
+1.0 EV



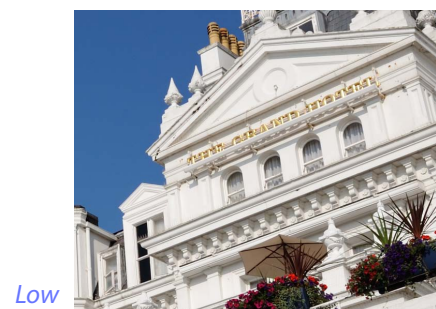
-1.0 EV



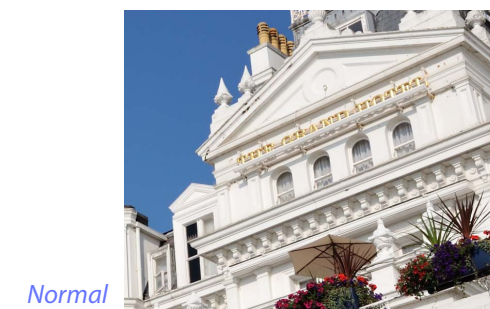
For values between +5.0 and -5.0 EV, incremented in steps of 0.01 EV, use the **Exposure Compensation** control in the image adjustment palette.



The image adjustment palette also offers an **Active D-Lighting** menu that can be used to bring out details in highlights and shadows.



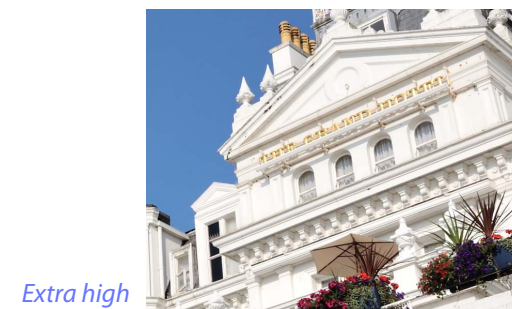
Low



Normal



High



Extra high

Active D-Lighting

Active D-Lighting is available only with RAW images taken using cameras that support Active D-Lighting.

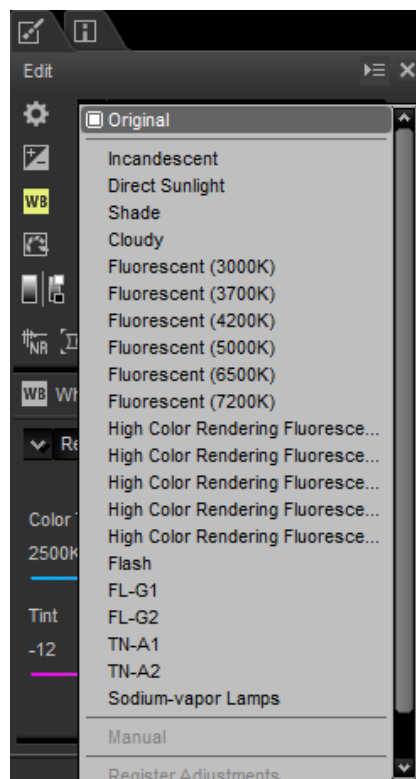


White Balance (RAW Images)

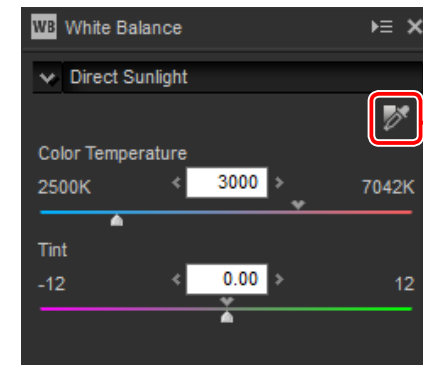
Adjust white balance.




The pull-down menu in the tool list offers a choice of preset values.



White balance can be fine-tuned using the **Color Temperature** and **Tint** controls in the image adjustment palette. **Tint** can be set to values between -12 and $+12$: choose lower values for less green and more magenta, higher values for the opposite effect. The range of values available for **Color Temperature** vary with the option selected for white balance.



Gray point sample tool

White balance can also be set by sampling the image: click the  (**Gray Point Sample Tool**) button and click anywhere in the image to sample a single pixel, or drag the cursor over the image to use the average color value for the selected area. White balance for the entire image will be adjusted so that selected pixel or area takes on a neutral gray color.



Blue area sampled

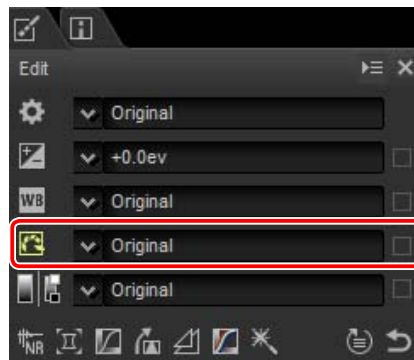


White balance adjusted to give blues a gray cast and the overall image a "warm" cast

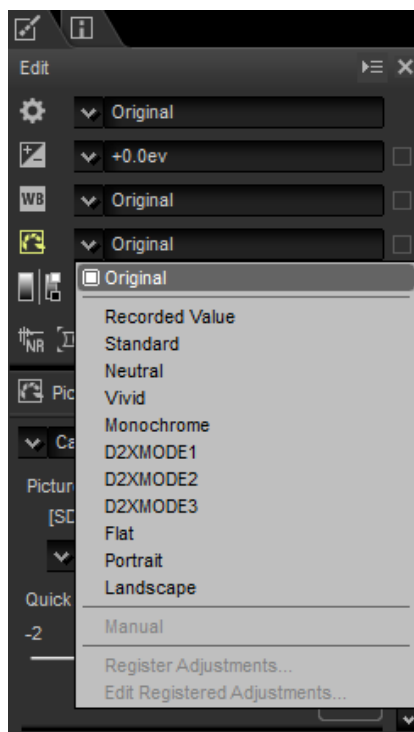


Picture Control (RAW Images)

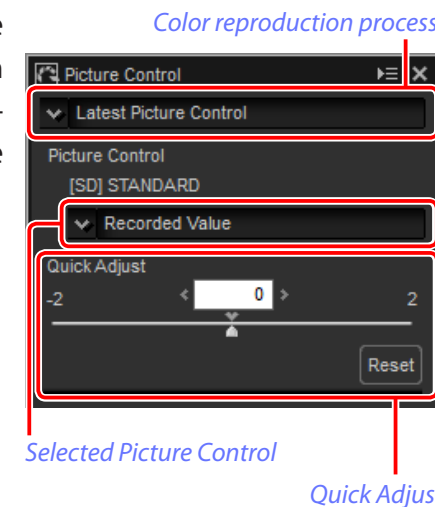
Adjust Picture Control settings.



The pull-down menu in the tool list offers a choice of preset Picture Controls.



The controls in the image adjustment palette can be used to choose a color reproduction process, perform quick adjustments to the selected control, or fine-tune individual Picture Control parameters.



■ Color Reproduction Process

Choose one of the following options:

- **Latest Picture Control:** Colors are processed using the Picture Controls for the latest Nikon cameras.
- **Camera compatible:** Colors are processed using the Picture Controls for the camera that took the picture.

■ Quick Adjust

Drag the slider left or right to mute or heighten the effect of the selected Picture Control, or click **Reset** to reset the slider to zero. Quick adjust affects all Picture Control settings simultaneously and cancels any changes made separately to the individual parameters. It is not available with neutral, flat, or monochrome Picture Controls.



Picture Control Parameters

Fine-tune individual Picture Control parameters, including sharpening, clarity, contrast, and saturation, or select **Auto** to let Capture NX-D adjust settings automatically (note that **Auto** produces results that may vary with exposure and the position and size of the subject in the frame). What parameters are available depends on the Picture Control selected.

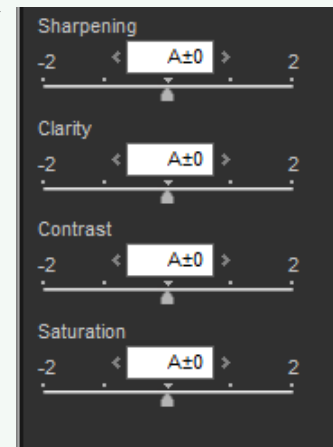
- **Sharpening:** Control the sharpness of outlines. Choose higher values for more sharpening.
- **Clarity:** Adjust clarity (requires **Latest Picture Control** or a picture taken with a camera that supports the **Clarity** parameter).
- **Contrast:** Adjust contrast. Choose lower values for less contrast, higher values for more contrast.
- **Brightness:** Adjust brightness without losing detail in highlights and shadows.
- **Saturation** (non-monochrome only): Control the vividness of colors. Choose lower values for less saturation, higher values for more saturation.
- **Hue** (non-monochrome only): Adjust hue.
- **Filter Effect** (monochrome only): Simulate the effects of color filters on monochrome photographs.
- **Toning** (monochrome only): Choose the tint used in monochrome photographs.
- **Toning Saturation** (monochrome only): Choose the saturation of the tint used in monochrome pictures. Does not apply to black-and-white images.



Note that **Contrast** and **Brightness** can not be adjusted if **Camera compatible** is selected for pictures taken with Active D-Lighting or a Picture Control that uses a custom curve.

The "AUTO" Picture Control

The parameters for the **AUTO** Picture Control can be set values of from A-2 to A+2.





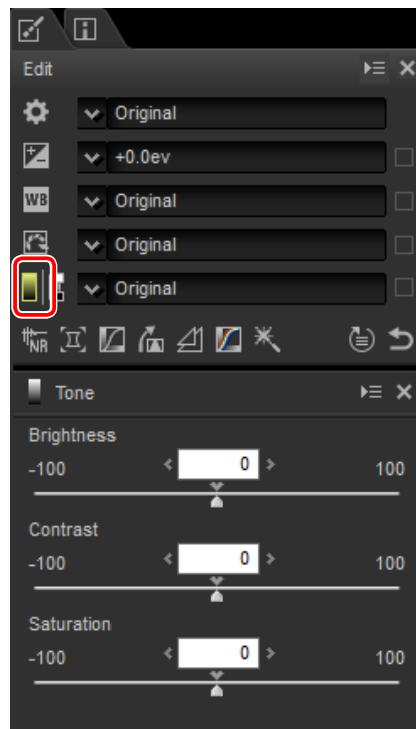
Tone/Tone (Detail)

Adjust overall brightness and contrast, or make adjustments that affect only highlights and shadows.

Tone

Clicking the icon shown in the illustration displays the following controls in the image adjustment palette:

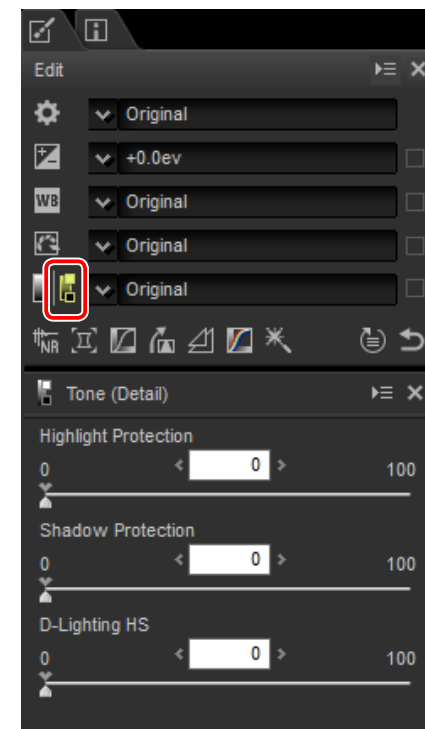
- **Brightness:** Adjust overall brightness. Choose from values between -100 and +100: the higher the value, the brighter the result.
- **Contrast:** Adjust overall contrast. Choose from values between -100 and +100: the higher the value, the greater the contrast.
- **Saturation:** Control the vividness of colors. Choose from values between -100 and +100: the higher the value, the more vivid (saturated) the result.



Tone (Detail)

Clicking the icon shown in the illustration displays the following controls in the image adjustment palette:

- **Highlight Protection:** Preserve details in highlights. Values range from 0 to 100: choose higher values to reduce brightness in highlights.
- **Shadow Protection:** Preserve details in shadows. Values range from 0 to 100: choose higher values to increase brightness in shadows.
- **D-Lighting HS:** Brighten shadows in backlit or poorly-lit pictures or reduce loss of detail in highlights. Higher values reduce the contrast between shadows and highlights.





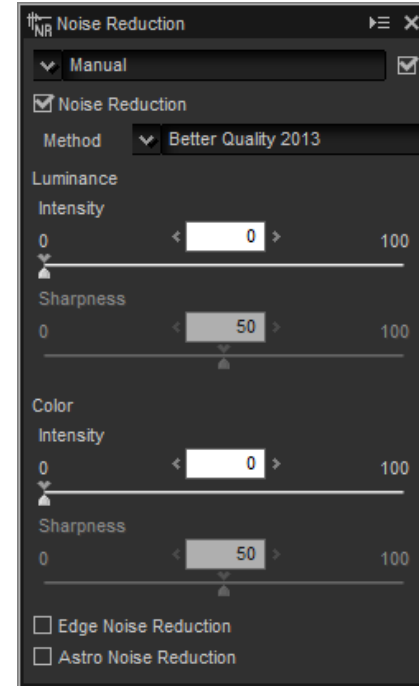
Tool Buttons

Use the tool buttons for access to tools not in the tool list.

Noise Reduction

Selecting this tool displays the following controls in the image adjustment palette:

- **Noise Reduction:** Enable or disable noise reduction.
- **Method:** Select **Faster** for faster processing, **Better Quality** or **Better Quality 2013** for more accurate noise reduction. Selecting **Better Quality 2013** allows separate **Intensity** and **Sharpness** adjustments for **Luminance** and **Color** (RAW images only).
- **Intensity:** Choose from values between 0 and 100. The higher the value, the smoother the image and the less visible the artifacts caused by image “noise”.
- **Sharpness:** Choosing high values for **Intensity** may smooth the image to the point that details are lost; this can be countered by increasing **Sharpness**.
- **Edge Noise Reduction** (RAW images only): Make outlines more distinct by reducing the occurrence of noise artifacts around edges.
- **Astro Noise Reduction** (RAW images only): Reduce the occurrence of randomly-spaced bright pixels in long exposures.



Better Quality 2013

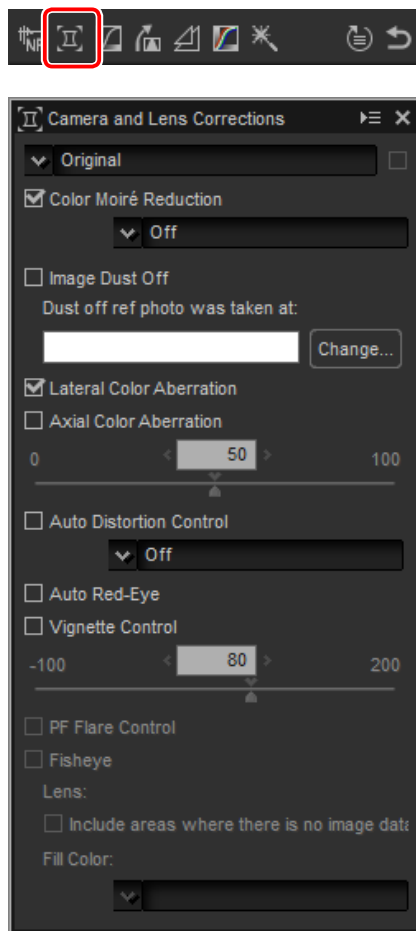
Better Quality 2013 excels in reducing color noise at short wavelengths and over evenly-colored areas of the image.



Camera and Lens Corrections

Selecting this tool displays the following controls in the image adjustment palette:

- **Color Moiré Reduction** (RAW images only): To reduce color moiré (an image artifact visible where regular patterns overlap), select this item and choose an option from the menu.
- **Image Dust Off** (regular- or large-size RAW images only): Compare photos with reference data recorded using the camera to mitigate the effect of dust on the low-pass filter. Click **Change...** to choose the NDF file containing the desired data. For more information on recording reference data, see the camera manual.
- **Lateral Color Aberration**: Reduce lateral color aberration (colored fringes and halos) in RAW images. At default settings, this option is not applied to JPEG and TIFF images.
- **Axial Color Aberration**: Reduce blurred colors caused by axial color aberration. Choose from values between 0 and 100: the higher the value, the greater the effect.
- **Auto Distortion Control**: This option uses the lens information recorded with photographs to reduce the barrel distortion associated with wide-angle lenses and the pin-cushion distortion associated with telephoto lenses. Auto distortion control can be turned on or off from the pull-down menu; if the photograph was taken with an advanced camera with interchangeable lens fitted with a waterproof lens, you will also be offered an **On (underwater)** option for reducing pin-cushion distortion in photos taken underwater.
- **Auto Red-Eye**: Automatically detect and remove “red-eye”.



- **Vignette Control**: Adjust for variations in peripheral illumination that occur with some lenses. Choose from values between -100 and $+200$: the higher the value, the greater the increase in brightness at the edges of the image.
- **PF Flare Control**: Reduce ring flare, circular flare, and other flare effects caused by bright light sources in the frame.
- **Fisheye**: This option is available only with photos taken using AF DX Fisheye-Nikkor 10.5mm f/2.8G ED, AF Fisheye-Nikkor 16mm f/2.8D, or AF-S Fisheye NIKKOR 8-15mm f/3.5-4.5E ED lenses.



■ Image Dust Off

Follow the steps below to perform Image Dust Off.

- 1 Click **Change....** If the current folder contains an Image Dust Off reference file, a message will be displayed; proceed to Step 2. If no message is displayed, proceed to Step 3.
- 2 To perform Image Dust Off using the file in the current folder, select **Yes**. Otherwise, select **No** and proceed to Step 3.
- 3 Select a reference file and click **OK** to perform Image Dust Off.

Image Dust Off

Dust changes position from day to day; if possible, use reference data recorded in the last 24 hours. If the camera offers image sensor cleaning, use only data recorded after the most recent cleaning, as cleaning can change the position of the dust.

■ Fisheye

Select **Fisheye** to process photos taken with fisheye lenses so that they appear to have been taken with a wide-angle rectilinear lens. An area at the center of the image (circular fisheye lenses) or centered around lines drawn horizontally and vertically through the center of the image (full-frame fisheye lenses) is cropped to match the camera picture angle.



Full-frame fisheye

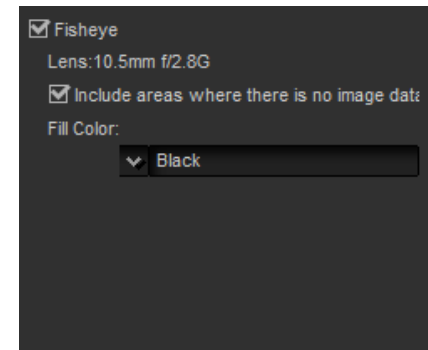


Circular fisheye



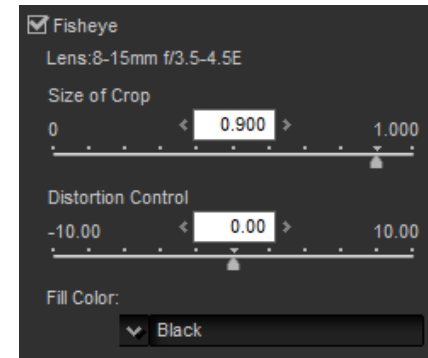
The AF DX Fisheye-Nikkor 10.5mm f/2.8G ED and AF Fisheye-Nikkor 16mm f/2.8D

If **Include areas where there is no image data** is selected, the image will not be cropped; instead, sections of the image will be bent. The bends contain no image data and are filled with the color selected in the **Fill color** menu.



The AF-S Fisheye NIKKOR 8-15mm f/3.5-4.5E ED

The **Size of Crop** slider controls the size of the crop. The smaller the crop, the more the center of the image will be enlarged. Choosing values closer to 1 with full-frame fisheye images will result in sections containing no image data, which are filled with the color selected in the **Fill color** menu.



The **Distortion Control** slider controls distortion. High values curve the image outward, while lower values curve it inward.



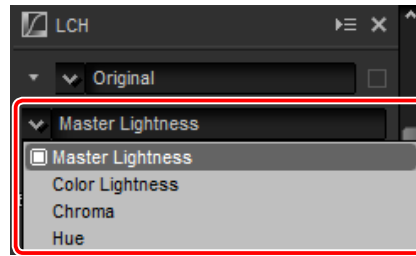
LCH

The LCH color space models color using values for lightness (a property similar but not identical to brightness or luminance), chroma (color saturation), and hue. These parameters can be accessed via the channel menu in the image adjustment palette when the LCH tool is selected.

■ Master Lightness

Adjust overall lightness without affecting chroma or hue.

- Auto Contrast:** Increase contrast by setting the white and black points to exclude a set proportion of the brightest and darkest pixels in the image.
- Add Anchor Point:** Click this button and then click the image in the preview palette to add a point to the curve corresponding to the lightness of the pixel under the cursor.
- Reset Current Channel:** Reset the master lightness curve to linear.
- Reset All Channel:** Reset the master lightness, color lightness, chroma, and hue curves to linear.
- White-point output-level slider:** Choose the maximum output level (white point).
- Histogram:** The histogram shows how the pixels in the image are distributed with respect to lightness. The horizontal axis corresponds to lightness (in the range 0–255), the vertical axis to the number of pixels.

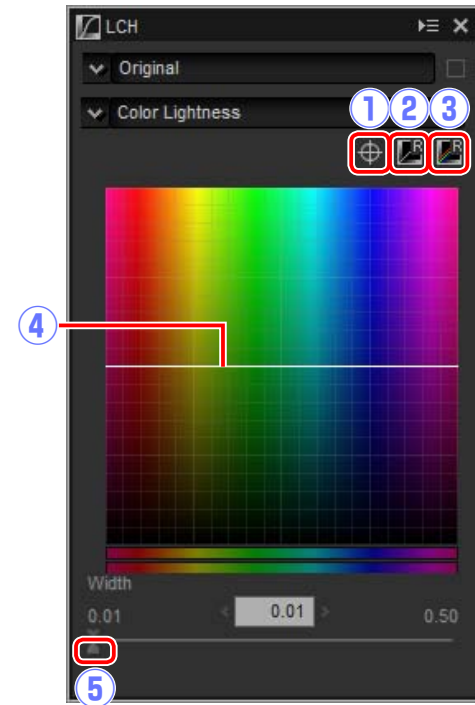


- Luminosity curve:** The slope and shape of the curve determines the lightness of the image in the corresponding portion of the tone range.
- Black-point output-level slider:** Choose the minimum output level (black point).
- Black-point input slider:** Choose the minimum (black point) input level.
- Gamma:** Choose the midpoint (gamma value).
- White-point input slider:** Choose the maximum (white point) input level.

■ Color Lightness

Adjust the lightness of selected colors without affecting chroma or hue. This can be used, for example, to brighten the blue of a dark skies.

- Add Anchor Point:** Click this button and then click the image in the preview palette to add a point to the curve corresponding to the value for the pixel under the cursor.
- Reset Current Channel:** Reset the color lightness curve to linear.
- Reset All Channel:** Reset the master lightness, color lightness, chroma, and hue curves to linear.
- Color lightness curve:** Moving a point on the curve upwards makes colors in the affected portion of the color range brighter, while moving it downward makes the affected colors darker.
- Width slider:** Adjust the width of the curve that passes through the selected point, increasing or decreasing the range of colors affected by the change.

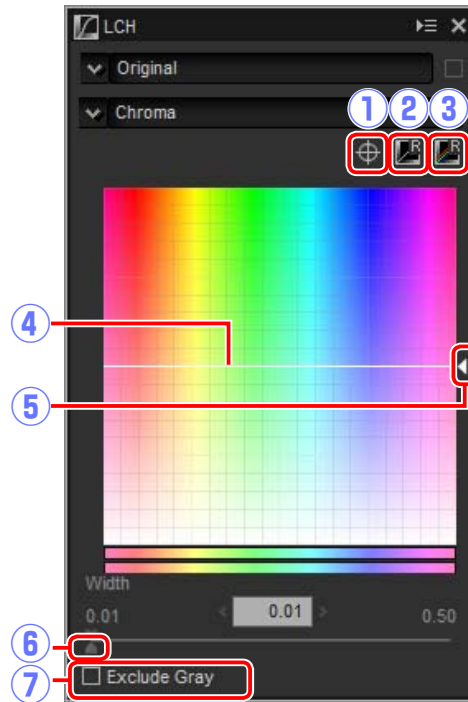




■ Chroma

Increase or decrease color saturation over the entire image or a portion of the color range, making colors more or less vivid.

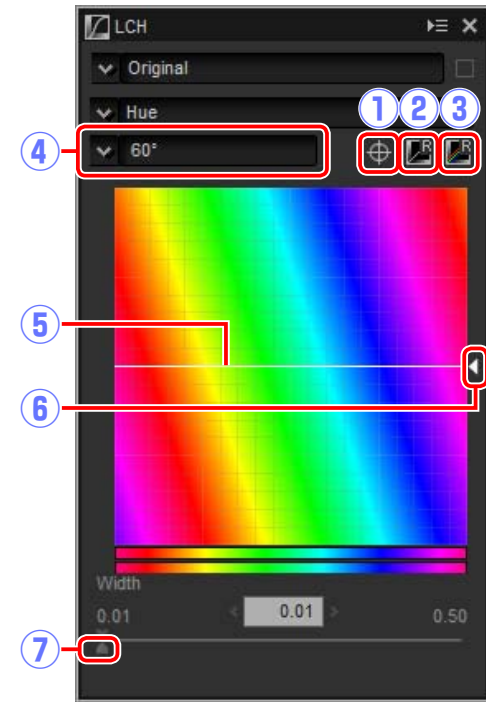
- ① **Add Anchor Point:** Click this button and then click the image in the preview palette to add a point to the curve corresponding to the chroma of the pixel under the cursor.
- ② **Reset Current Channel:** Reset the chroma curve to linear.
- ③ **Reset All Channel:** Reset the master lightness, color lightness, chroma, and hue curves to linear.
- ④ **Chroma curve:** Moving a point on the curve upwards makes colors in the affected portion of the color range more vivid, while moving it downward makes the affected colors less vivid (grayer).
- ⑤ **Output slider:** Increase or decrease the saturation of all colors in the image.
- ⑥ **Width slider:** Adjust the width of the curve that passes through the selected point, increasing or decreasing the range of colors affected by the change.
- ⑦ **Exclude Gray:** Increasing chroma may make neutral colors (grays) seem oversaturated. Select this option to increase chroma without affecting grays.



■ Hue

Map selected colors in the original (input) image to a specific range of colors in the final (output) image. One application might be to deepen the colors in a pale blue sky.

- ① **Add Anchor Point:** Click this button and then click the image in the preview palette to add a point to the curve corresponding to the hue of the pixel under the cursor.
- ② **Reset Current Channel:** Reset the hue curve to linear.
- ③ **Reset All Channel:** Reset the master lightness, color lightness, chroma, and hue curves to linear.
- ④ **Scale:** Click to change the vertical scale from 60 ° through 120 ° to 180 ° and back again (in this case the degrees refer to a 360 ° color wheel). Increasing the scale increases the range of hues visible in the display, while decreasing the scale increases precision.
- ⑤ **Hue curve:** Select a point on the curve that corresponds to the desired input color and drag it up or down until it intersects with the desired output color.
- ⑥ **Output slider:** Modify the hue of all colors in the image.
- ⑦ **Width slider:** Adjust the width of the curve that passes through the selected point, increasing or decreasing the range of colors affected by the change.





Straighten and Perspective Control

Straighten pictures or correct for the effects of perspective.

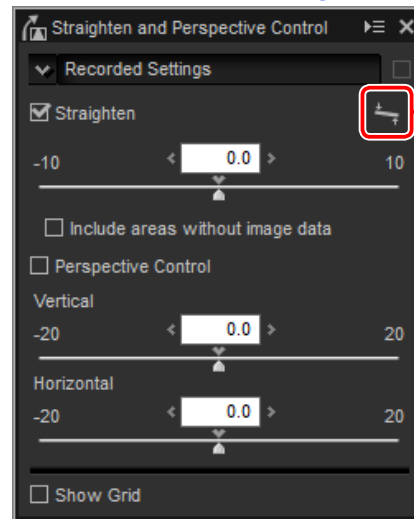
■ Straighten

Straighten pictures by up to $\pm 10^\circ$. Choose lower values to rotate the picture to the left, higher values to rotate it to the right. To hide the effects of straightening, remove the check from the **Straighten** checkbox.

To straighten pictures manually, click the straighten tool in the image adjustment palette and drag the cursor parallel to a line in the preview (this option can not be used with thumbnails; [page 10](#)). The image will be rotated by up to $\pm 10^\circ$ to make the reference line horizontal or vertical, and the degree of rotation will be displayed in the text box in the image adjustment window. Unless **Include areas without image data** is selected, the image will automatically be cropped to remove any empty corners.



Straighten tool



Drag cursor parallel to reference line



Image rotated to make reference line horizontal and cropped to remove empty corners

■ Include Areas Without Image Data

Select this option to fill empty corners with black.



Drag cursor parallel to reference line



Image rotated to make reference line horizontal and with empty corners filled in black

■ Perspective Control

Correct the effect of perspective on, for example, photos taken with the camera angled up to frame a tall building. Perspective can be adjusted vertically and horizontally by up to $\pm 20^\circ$.



Vertical: 20

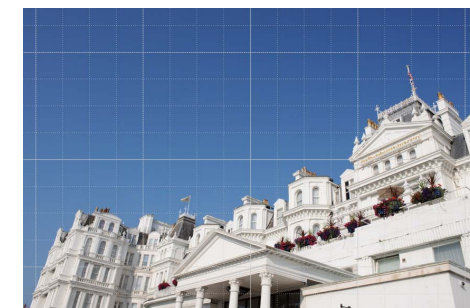


Horizontal: 20



■ Show Grid

Select this option to display a grid. The grid color and spacing can be selected in the "View" tab of the preferences dialog ([page 46](#)).

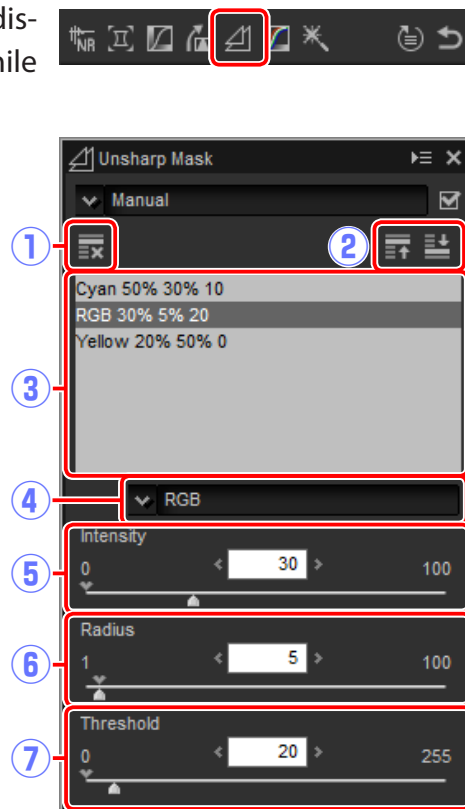




Unsharp Mask

Increase sharpness by making edges more distinct. The contrast of edges is increased while other areas are left untouched.

- ① **Delete:** Delete the currently-selected mask from the unsharp mask list.
- ② **Move Up/Move Down:** Move the currently-selected mask up or down in the unsharp mask list.
- ③ **Unsharp mask list:** A list of unsharp masks, identified by color channel, intensity, halo width, and threshold (e.g., "Red, 50%, 10%, 0"). Masks apply in the order listed; to change the order, use the up/down buttons.
- ④ **Color:** Choose the color channel to which the unsharp mask applies.
- ⑤ **Intensity:** The amount edge contrast will be increased.



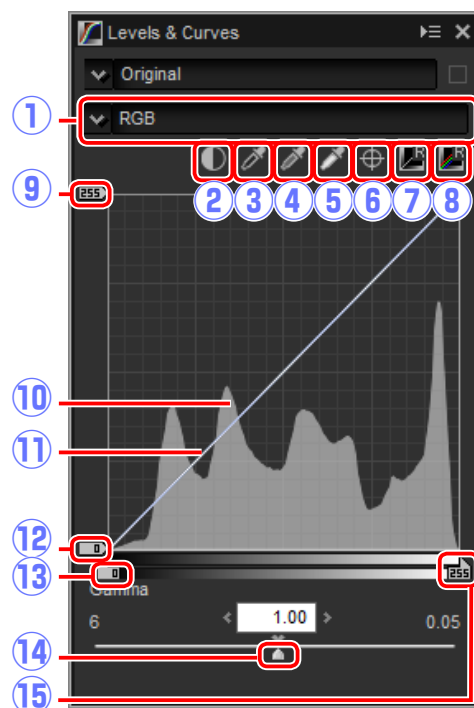
- ⑥ **Radius:** The greater the radius, the wider the edges in the sharpened image will appear.
- ⑦ **Threshold:** The limit at which sharpening will be applied. If the threshold is zero, sharpening will apply to all pixels in the image. Increasing the threshold increases the amount of contrast that must be present between pixels before the mask will be applied, with the result that only more distinctly contrasting edges will be affected.



Levels & Curves

Adjust contrast, tone (brightness), and color balance. Adjustments can be made over the entire image or to specific portions of the tone range (for example, the gamut of a specific printer, monitor, or other output device), allowing enhancements to be made without sacrificing detail.

- ① **Channel:** The current color channel.
- ② **Auto Contrast:** Increase contrast by setting the white and black points to exclude a set proportion of the brightest and darkest pixels in the image, creating a curve that makes optimal use of the output tone range while preserving details in shadows and highlights.
- ③ **Set Black Point:** Click this button and then click the image in the preview palette to set the black point for the red, green, and blue channels to the value for the pixel under the cursor.
- ④ **Set Neutral Point:** Click this button and then click the image in the preview palette to adjust gamma for the red, green, and blue channels to equalize the RGB values for the pixel under the cursor.
- ⑤ **Set White Point:** Click this button and then click the image in the preview palette to set the white point for the red, green, and blue channels to the value for the pixel under the cursor.
- ⑥ **Add Anchor Point:** Click this button and then click the image in the preview area to add a point to the curve corresponding to the value of the pixel under the cursor.
- ⑦ **Reset Current Channel:** Reset the curve for the current channel to linear.



- ⑧ **Reset All Channel:** Reset all curves to linear.
- ⑨ **White-point output-level slider:** Choose the maximum output level (white point). Dragging the slider down lowers the brightness of the brightest pixels.
- ⑩ **Histogram:** The histogram shows how the pixels in the image are distributed with respect to brightness. The horizontal axis corresponds to brightness (in the range 0–255), the vertical axis to the number of pixels.
- ⑪ **Tone curve:** The slope and shape of the curve determines the brightness of the image in the corresponding portion of the tone range.
- ⑫ **Black-point output-level slider:** Choose the minimum output level (black point). Dragging the slider up increases the brightness of the darkest pixels.
- ⑬ **Black-point input slider:** Any pixels in the portion of the tone range to the left of the black point are output at the minimum output level. Dragging the slider to the right steepens the curve and enhances contrast but may cause loss of details in shadows.
- ⑭ **Gamma:** Dragging the slider to the left increases the brightness of mid-tones, while dragging it to the right makes mid-tones darker.
- ⑮ **White-point input slider:** Any pixels in the portion of the tone range to the right of the white point are output at the maximum output level. Dragging the slider to the left steepens the curve and enhances contrast but may cause loss of details in highlights.

Sampling the Current Channel

By default, the black point, white point, add anchor point, and auto contrast controls respectively set the black point, anchor points, white point, and contrast for all channels. To apply these controls only to the current channel, press **Ctrl** (or on Mac computers, the **option** key) while clicking the control.



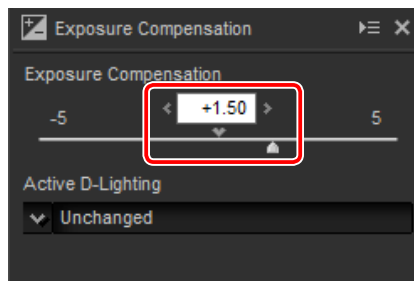
Copying Adjustments

Image adjustments can be copied and applied to other pictures, speeding the process of enhancing pictures taken under similar conditions.

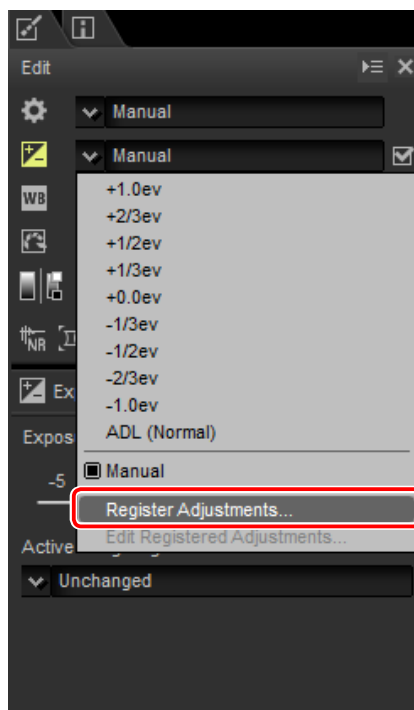
Adding Adjustments to the Tool List

Current settings can be added to the menus in the tool list.

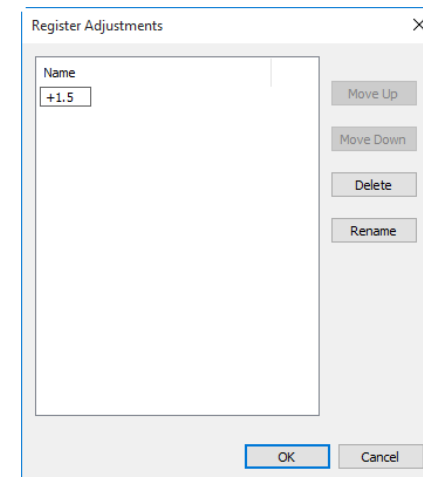
- 1 Select a tool from the tool list and adjust settings in the adjustment palette. Here we have set exposure compensation (page 20) to +1.50.



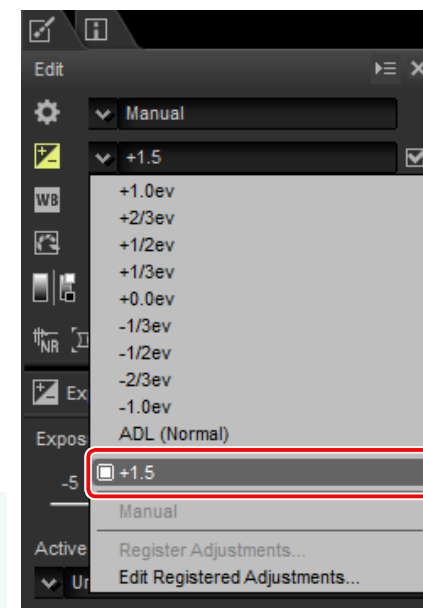
- 2 Select **Register Adjustments** from the pull-down menu in the tool list.



- 3 Enter a name for the new setting and click **OK**. In this example, we have named the setting +1.5.



The new setting is added to the pull-down menu and can now be applied to other pictures.



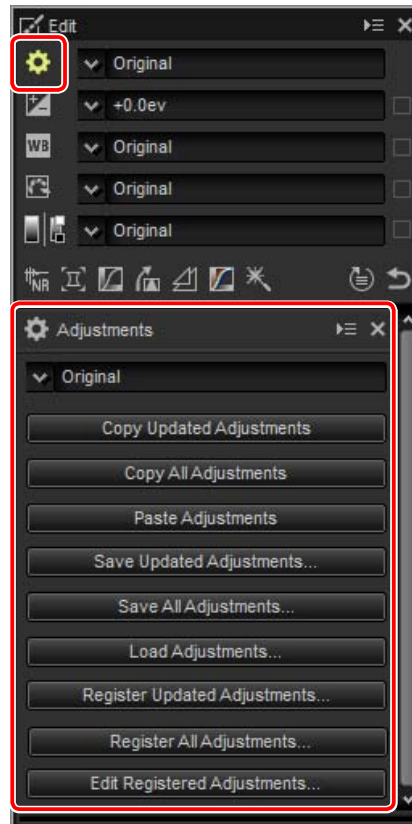
- ✔ Selecting **Edit Registered Adjustments** from the pull-down menu displays a dialog where you can rename or delete previously-saved settings.



The Adjustment Manager Tool

The adjustment manager can be used to apply multiple adjustments simultaneously.

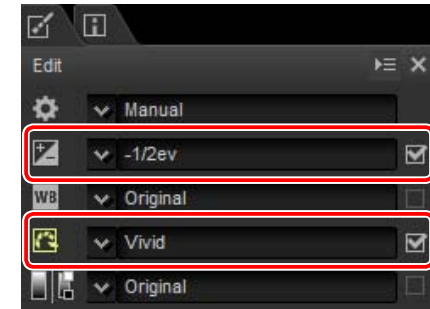
- **Copy Updated Adjustments:** Copy all adjustments that have been changed since the current folder was selected.
- **Copy All Adjustments:** Copy all adjustments.
- **Paste Adjustments:** Apply adjustments copied using **Copy Updated Adjustments** or **Copy All Adjustments** to the currently-selected image or images.
- **Save Updated Adjustments:** Save all adjustments that have been changed since the current folder was selected.
- **Save All Adjustments:** Save all adjustments.
- **Load Adjustments:** Select an adjustments file saved using **Save Updated Adjustments** or **Save All Adjustments** and apply it to the currently-selected image or images.
- **Register Updated Adjustments:** Any adjustments that have been changed since the current folder was selected are saved and added as an option to the adjustment manager pull-down menu.
- **Register All Adjustments:** All current adjustments are saved and added as an option to the adjustment manager pull-down menu.
- **Edit Registered Adjustments:** Reorder, rename, or delete adjustments previously added to the adjustment manager pull-down menu.




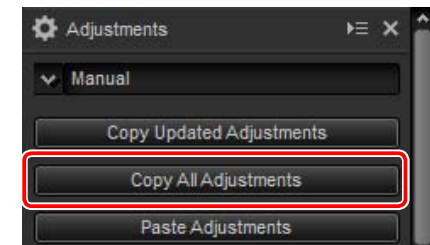
Copying Adjustments to Other Pictures

Follow the steps below to copy adjustments and apply them to other images.

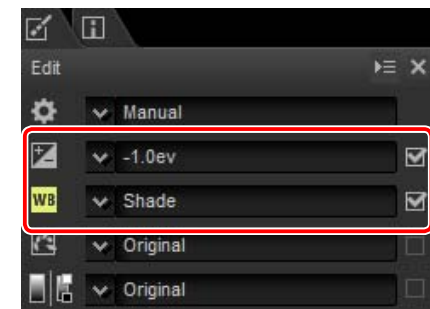
- 1 Adjust settings in the edit palette. Here we have set exposure compensation (page 20) to $-1/2$ EV and selected the **Vivid** Picture Control (page 22).




- 2 Click the adjustment manager  icon and select **Copy Updated Adjustments** or **Copy All Adjustments** from the options in the adjustment palette. Here we have selected **Copy All Adjustments**.

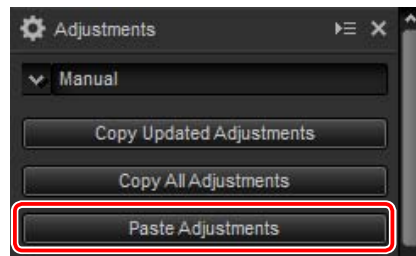


- 3 Select images. In this example, the selected image has already been adjusted using the exposure compensation (page 20) and white balance (page 21) tools.

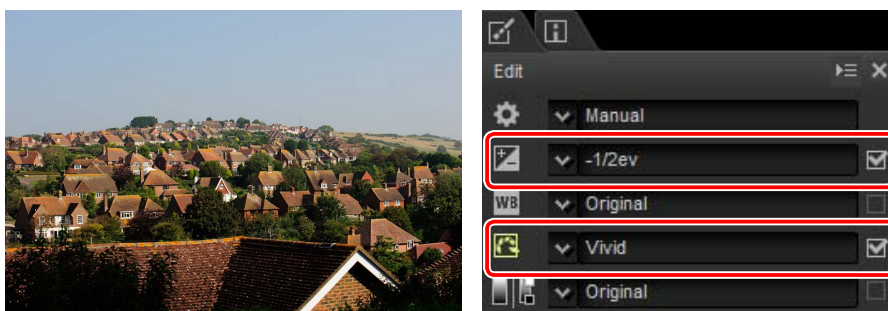





- 4 Click the adjustment manager  icon and select **Paste Adjustments** from the options in the adjustment palette.



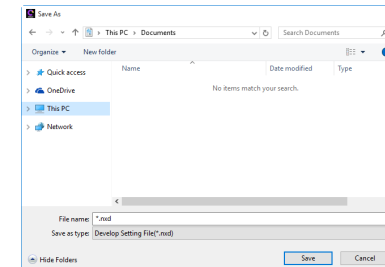
The adjustments copied in Step 2 are applied to the images selected in Step 3. Because we selected **Copy All Adjustments** in Step 2, exposure compensation changes to $-1/2$ EV while white balance reverts to **Original**.



-  Had we selected **Copy Updated Adjustments** in Step 2, the exposure compensation and Picture Control for the selected image would have been set to the values selected in Step 1, while white balance would have remained at the value selected in Step 3.

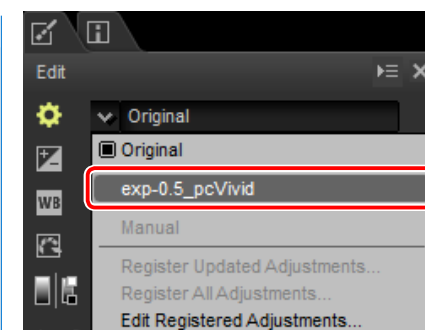
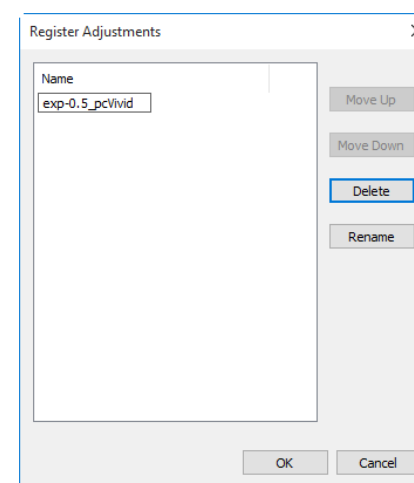
■ Copying Adjustments to Other Computers

The **Save Updated Adjustments** and **Save All Adjustments** options save image adjustments to a file which can be copied to other computers. The adjustments can then be applied to selected pictures on the other computers using **Load Adjustments**.



■ Adding Adjustments to the Adjustment Manager

Use the **Register Updated Adjustments** and **Register All Adjustments** options to add adjustments to the adjustment manager pull-down menu.



Copying Adjustments from RAW to JPEG or TIFF Images

When adjustments are copied from RAW (NEF/NRW) to JPEG or TIFF images, exposure compensation, Picture Controls, and other settings that are available only with RAW images will not be applied.

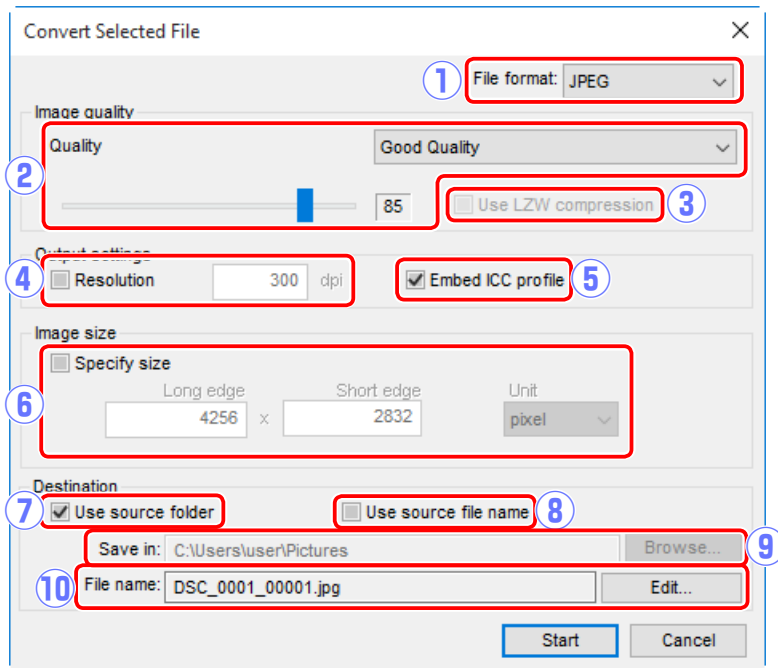


File Format

To save RAW (NEF/NRW) images in JPEG or TIFF format, click the  button in the toolbar.



A dialog will be displayed where you can choose a file format and adjust such settings as compression and image size. Click **Start** to copy the file or files in the selected folder.



- ① **File format:** Choose from **JPEG**, **TIFF (8 Bit)**, and **TIFF (16 Bit)**.
- ② **Quality** (JPEG only): Use the slider or pull-down menu to choose a value between 0 and 100. The higher the value, the lower the compression ratio and the higher the image quality; the lower the value, the higher the compression ratio and the smaller the file size.

- ③ **Use LZW compression** (TIFF only): Compress TIFF files using “lossless” LZW compression.

LZW compression may sometimes increase file size when applied to 16-bit images.

- ④ **Resolution:** Select this option to choose the output resolution.
- ⑤ **Embed ICC profile:** Select this option to embed the current color profile in the image.
- ⑥ **Specify size:** Select this option to resize pictures saved in the new format. The new size can be entered in pixels, centimeters, or inches. When you enter a value for either **Long edge** or **Short edge**, the remaining value will automatically be adjusted to maintain the original aspect ratio.
- ⑦ **Use source folder:** Save copies in the same folders as the originals.
- ⑧ **Use source file name:** Save copies under the same file names as the originals. Two-digit numbers will automatically be added in ascending order to the file names if files with the same names as the original already exist in the selected folder.
- ⑨ **Save in:** If **Use source folder** is not selected, click **Browse...** to select a destination folder.
- ⑩ **File name:** If **Use source file name** is not selected, click **Edit...** to name the copies using selected prefixes, suffixes, and sequential numbering.

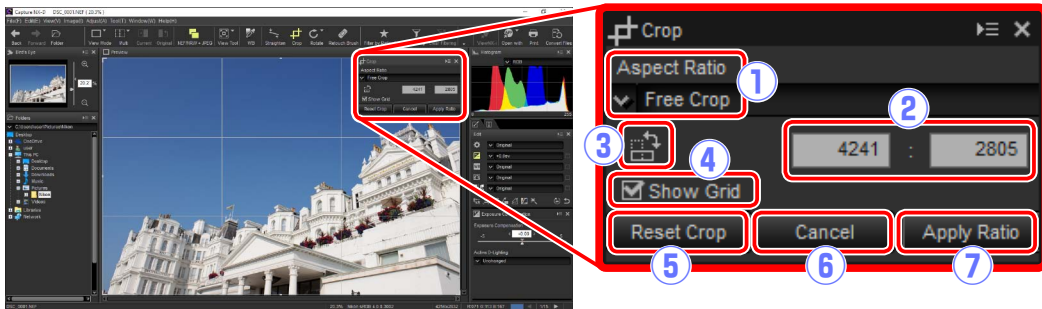


Cropping Pictures

To crop unwanted areas from images, click the  button in the toolbar.

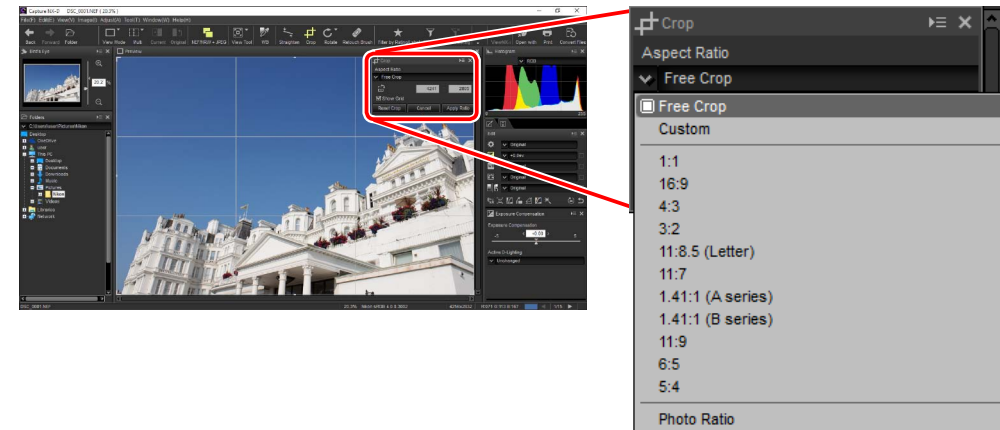



The crop palette will be displayed. Follow the steps below to crop images.



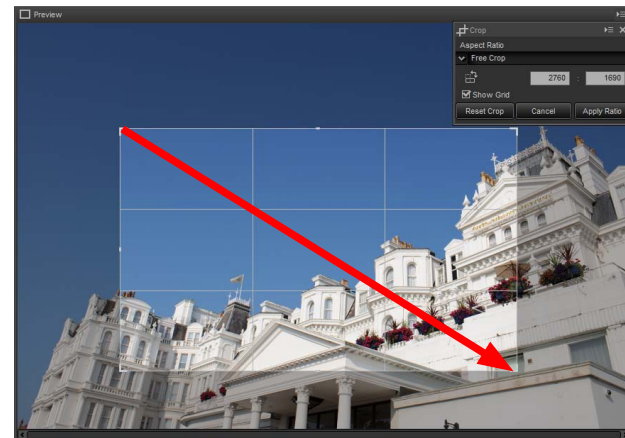
① Aspect Ratio	The crop aspect ratio. Choose Free Crop to select a crop with no fixed aspect ratio.
② Custom Aspect Ratio	For custom aspect ratios not listed in the aspect ratio menu, select Custom and enter the desired aspect ratio.
③ Rotate Crop	Rotate the crop 90°.
④ Show Grid	Display an evenly-spaced 3 × 3 grid inside the crop.
⑤ Reset Crop	Reset the current crop.
⑥ Cancel	Cancel the current crop.
⑦ Apply Ratio	Apply the current crop.

- 1 Choose an aspect ratio in the crop palette (to select a free crop with no fixed aspect ratio, choose **Free Crop**).



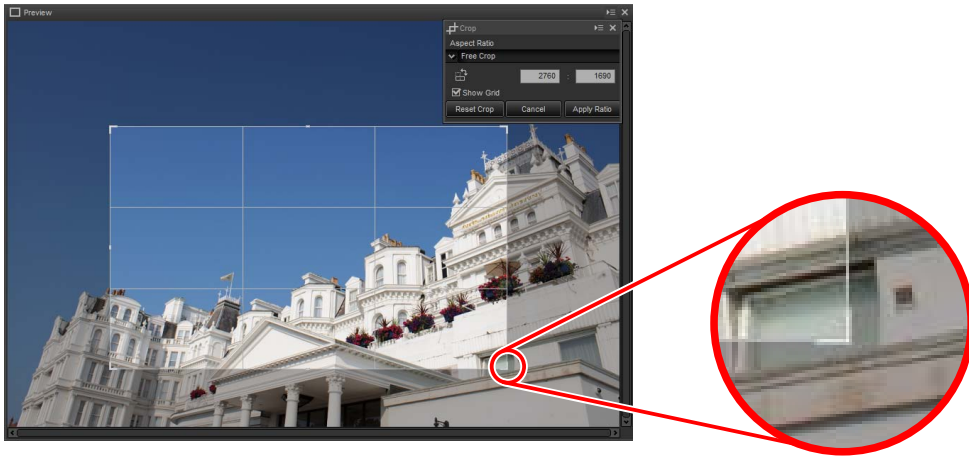
 The aspect ratio can be changed after you have resized and positioned the crop.

- 2 Drag the cursor over the image to select the crop. The area outside the crop is shown in gray.





- 3 Drag the corners of the crop to resize it without changing the aspect ratio.




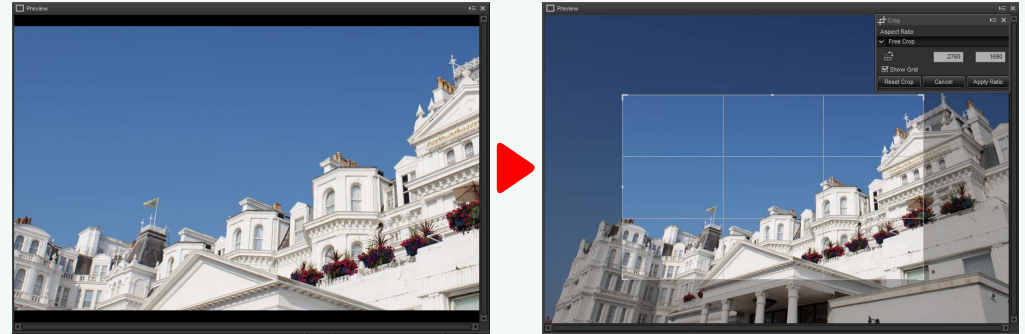
To reset the crop, click **Reset Crop**.

- 4 Double-click inside the crop or click the **Apply Ratio** button in the toolbar to crop the image.



Crop

Crops are not applied to the original image data and can be changed at any time by clicking the  button in the toolbar. This also applies in the case of images cropped using ViewNX 2 or ViewNX-i.



Crops are applied when images are converted to JPEG or TIFF ([page 36](#)). When NEF/NRW (RAW) images cropped in Capture NX 2 are opened in Capture NX-D, the crop is treated as the entire image; to select a crop that extends outside these bounds, click the revert button ([page 19](#)) to restore the original image and then select the desired crop.

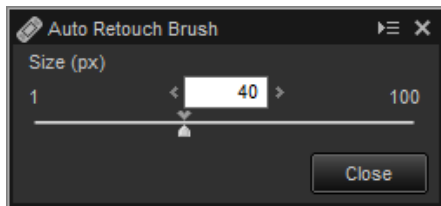


Removing Dust and Scratches

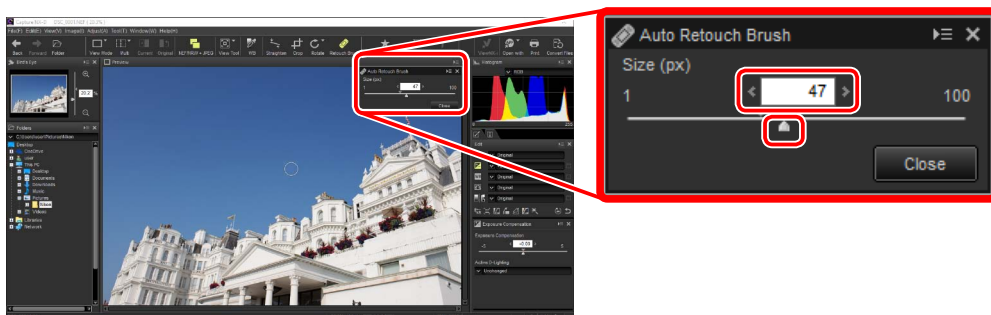
Dust and scratches can be removed using the retouch brush tool.



Clicking the  button in the toolbar displays the retouch brush palette.



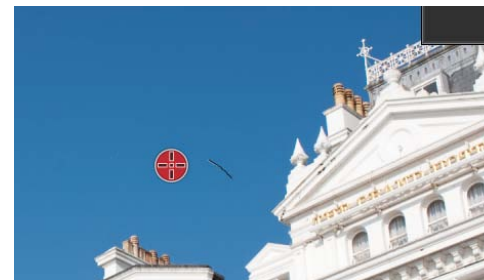
1 Choose the brush size.



Brush Size

A brush larger than the defect you are attempting to correct may affect neighboring areas of the image.

2 Keeping the mouse button pressed, drag the brush over the defect. The affected area is shown by a translucent red line; continue until the defect is completely covered.





3 Release the mouse button to apply the tool to the affected area.

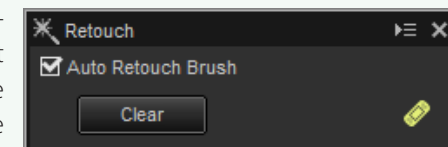


The Auto Retouch Brush

The retouch brush copies data from surrounding areas of the image automatically and pastes it over the defect. It may not produce the desired results if defects are widespread, the tool is dragged a long distance, or the affected is very large. The time required to complete processing varies with the image.

The Retouch Palette

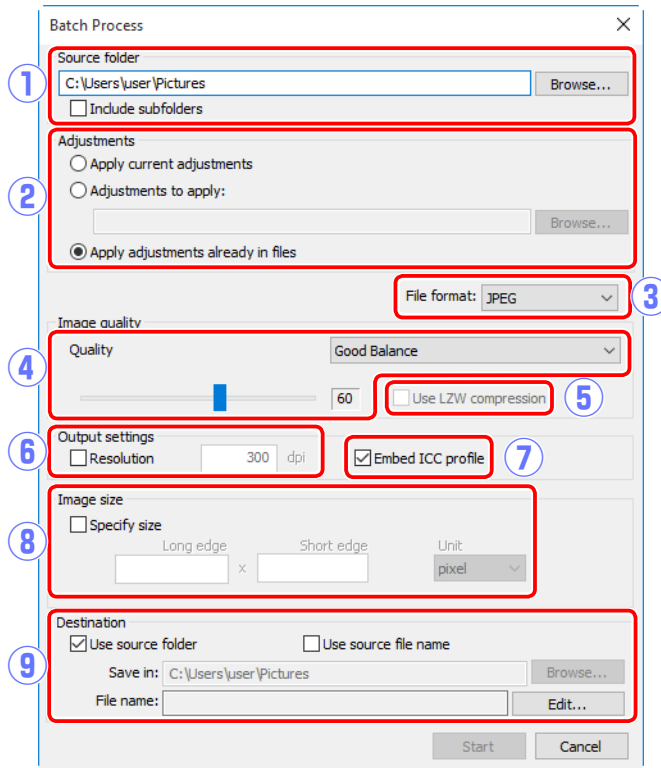
Clicking the  button in the toolbar or the  tool button in the edit palette displays the retouch palette. Select or deselect **Auto Retouch Brush** to show or hide the effects of the retouch brush, or undo the effects of the brush by clicking **Clear**.





Batch Processing

The **File > Run Batch Process** option can be used to perform the same image adjustments on all pictures in a selected folder and then export the processed images in a selected file format. Batch processing options are shown below.

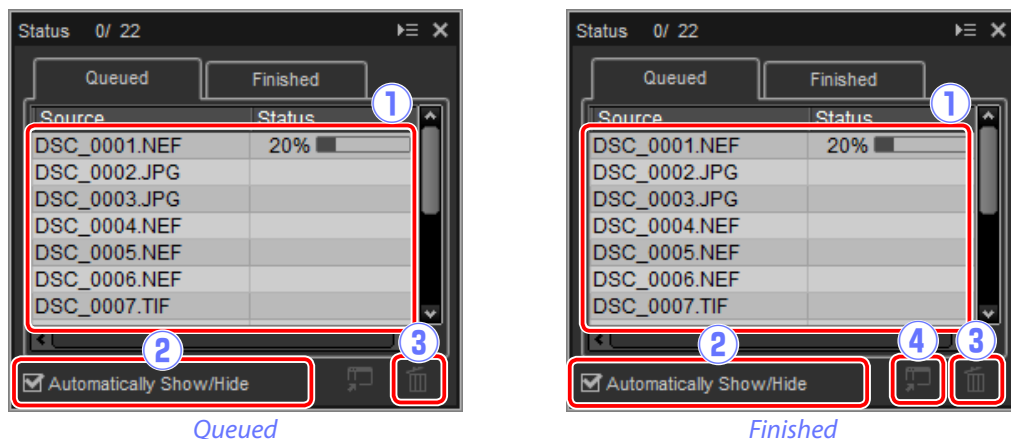


- 1 Source folder:** Click **Browse** to choose a source folder. To include all images in sub-folders under the selected folder, select **Include subfolders**.
- 2 Adjustments:** Select **Apply current adjustments** to process the images using the adjustments for the current image. To apply adjustments previously saved from the adjustment manager, choose **Adjustments to apply** and click **Browse** to choose an adjustments file. To export the images in the selected folder in another format without changing the settings currently selected for each image, choose **Apply adjustments already in files**.
- 3 File format:** Select the format in which the processed files will be saved. Choose from **JPEG**, **TIFF 8bit**, and **TIFF 16bit**.

- 4 Quality (JPEG only):** Use the slider or pull-down menu to choose a value between 0 and 100. The higher the value, the lower the compression ratio and the higher the image quality; the lower the value, the higher the compression ratio and the smaller the file size.
- 5 Use LZW compression (TIFF only):** Compress TIFF files using “lossless” LZW compression.
 - LZW compression may sometimes increase file size when applied to 16-bit images.
- 6 Resolution:** Select this option to choose the output resolution.
- 7 Embed ICC profile:** Select this option to embed the current color profile in each image.
- 8 Specify size:** Select this option to resize pictures saved in the new format. The new size can be entered in pixels, centimeters, or inches. When you enter a value for either **Long edge** or **Short edge**, the remaining value will automatically be adjusted to maintain the original aspect ratio.
- 9 Destination:** Select **Use source folder** to save the processed files to the current folder. To choose a different folder, remove the check from this option and click **Browse**. To save the processed files under the same names as the originals, select **Use source file name** (if a file with the same name and extension already exists in the current folder, the processed file will be renamed by adding a number to the file name); to choose different names, remove the check from this option and click **Edit**.





Clicking **Start** starts processing and displays a progress dialog. Progress can be viewed in the **Queued** and **Finished** tabs.



Queued


Finished

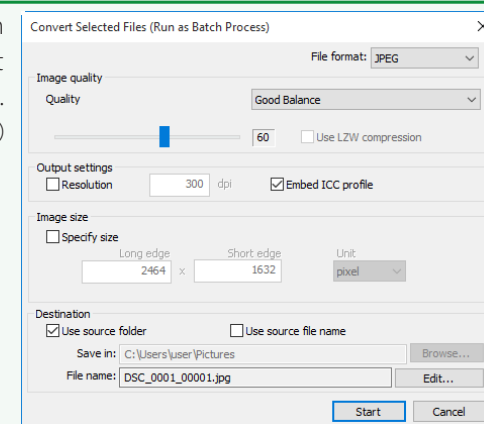
- ① **Source:** A list of the files that are awaiting processing or have been processed.
 - ② **Automatically Show/Hide:** Removing the check from this option hides the progress dialog. The progress dialog can be displayed by clicking the  button in the toolbar.
- 
- ③ **Delete:** Click to remove the file selected in the **Queued** tab from the queue, or to delete the log for the file selected in the **Finished** tab.
 - ④ **View folder:** Open the destination folder in the operating system file browser.

✔ Color Efex Pro

If the source contains files modified using the Color Efex Pro plug-in for Capture NX 2 or Capture NX, a message will be displayed and the images will not be processed.

✔ File Conversion

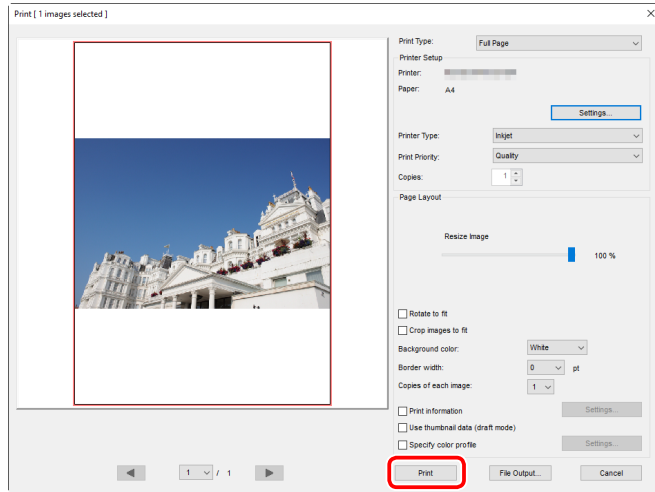
If multiple files are selected when the  button in the toolbar is used to export files in another format ([page 36](#)), the files will be exported as a batch process. Adjust settings as described for items ③ through ⑨ on [page 40](#).





Printing Pictures

To print pictures on a printer connected to the computer, select the pictures and choose **Print** in the **File** menu. The “Print” dialog will be displayed.



Adjust settings as described on the following page and click **Print** to print the picture as shown in the preview.

The “Print” Dialog

	Print Type	<ul style="list-style-type: none"> • Full Page: Print one picture per page. • Index Print: Print multiple images per page (page 44). • Standard Photo Sizes: Print pictures at a standard photo size. Capture NX-D automatically chooses the number of pictures printed on each page.
Printer Setup	Printer	Click Settings to choose the printer and paper size and adjust other printer settings.
	Printer Type	Choose Inkjet when printing on an inkjet printer.
	Print Priority	When printing NEF/NRW (RAW) pictures, choose Speed to use the preview data embedded in the image for faster printing, or Quality to use the original image data for higher quality output.
	Copies	Choose the number of copies of each page printed.
Page Layout	Rotate to fit	Rotate pictures to print them at the largest possible size.
	Crop images to fit	Pictures are enlarged to fill the print area. Portions that do not fit in the print area are cropped out.
	Background Color	Choose the background color. Choose White to print with no background.
	Border width	Choose the width of the borders printed around the image (the color of the borders varies with the background color). Choose 0 to print without borders.
	Copies of each image	Choose the number of copies of each photo printed.
	Print Information	Print the file name, date of recording, or photo information under each picture (page 43).
	Use thumbnail data (draft mode)	Print using thumbnail data. Images print faster, but at lower quality. Some images will print using the original file data even when this option is selected.
	Specify color profile	Click Settings... to select the color profile used for printing (Profile) and choose an Intent from Perceptual and Relative colorimetric (page 45).

Notes on Printing

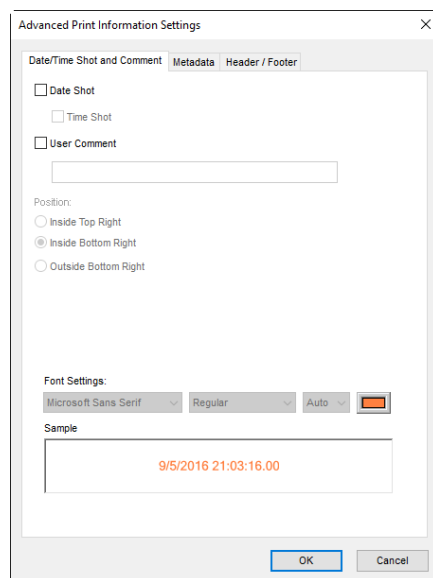
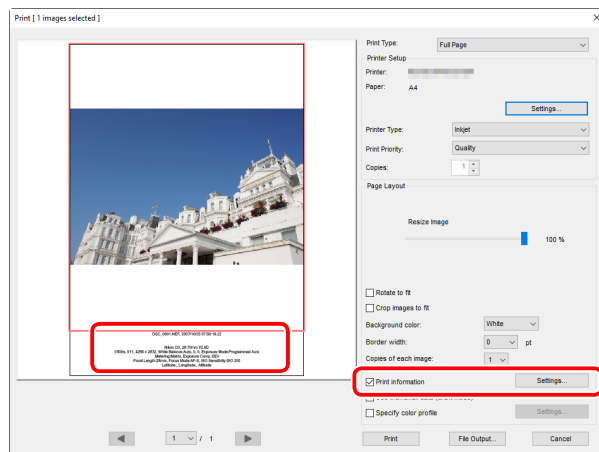
To print to a JPEG file, click **File Output**.

The most recently-used settings are recalled when the print dialog is next displayed.



Printing Image Information

To choose the information printed under each picture, select **Print Information** in the “Print” dialog (page 42), click **Settings**, and adjust the settings described on the following page.



Print Information

Print information is not rotated when **Rotate to fit** is selected in the “Print” dialog. Metadata that does not fit in the print area will be omitted.

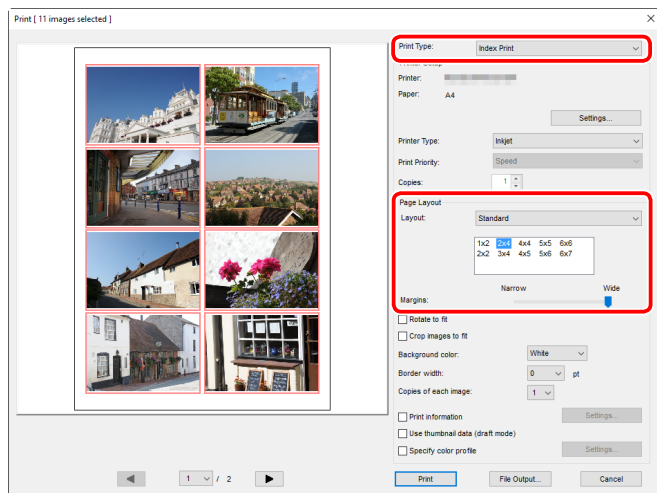
Advanced Print Information Settings

Date/Time Shot and Comment	Date Shot	Print the date of recording in the position selected for Position .
	Time Shot	Print the time of recording together with the date.
	User Comment	Print the comment entered in the text box.
Font Settings	Font Settings	Choose the font, style, font point size, and color used to print the date/time stamp. The results can be previewed in the “Sample” area.
	Metadata	Choose the file and photo information printed with each picture. The font, style, and font point size can be selected in the “Font Settings” area and previewed in the “Sample” area.
Header/Footer	Header	Enter the text and choose the alignment for the header that will be printed at the top of each page.
	Page Number	Choose whether to print the page number and the total number of pages and select the position and alignment. The page number can be positioned at the page Top (in the header) or Bottom (in the footer).
	Footer	Enter the text and choose the alignment for the footer that will be printed at the bottom of each page.
Font Settings	Font Settings	Choose a font, style, and font point size for the header, footer, and page number. The results can be previewed in the “Sample” area.



Index Prints

To print multiple images per page, select **Index Print** for “Print Type” in the “Print” dialog (page 42). The options in the “Page Layout” area will change; choose the number of pictures printed per page.

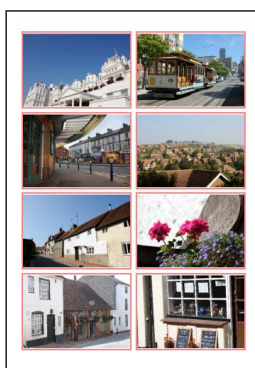


Layout

Choose a layout.

■ Standard

Choose the number of pictures per page from a list box. The size of the pictures is automatically adjusted according to the option selected.



A 2 × 4 layout

■ Image Size

Pictures are printed at the size entered for “Width” and “Height” (the minimum size is 20.0 mm × 20.0 mm and the maximum the same as the page size). The number of pictures per page is automatically adjusted according to the size selected.

■ Column and Row

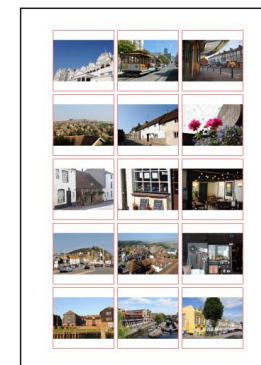
Choose the number of columns and rows printed per page (the minimum is 1 and the maximum 10). The size of the pictures is automatically adjusted according to the options selected.

■ Images Per Page

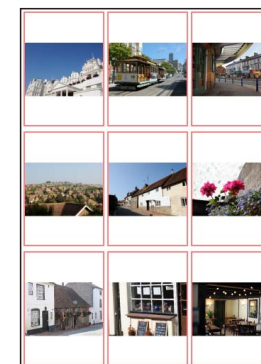
Choose the number of images printed per page. The images will automatically be resized according to the number selected.

Margins

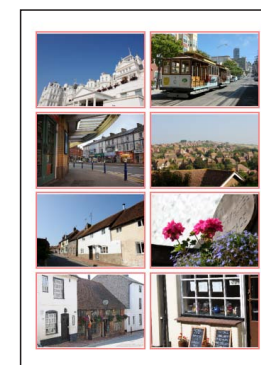
Choose the width of the margins.



Pictures printed at 50 mm × 50 mm



A 3 × 3 layout



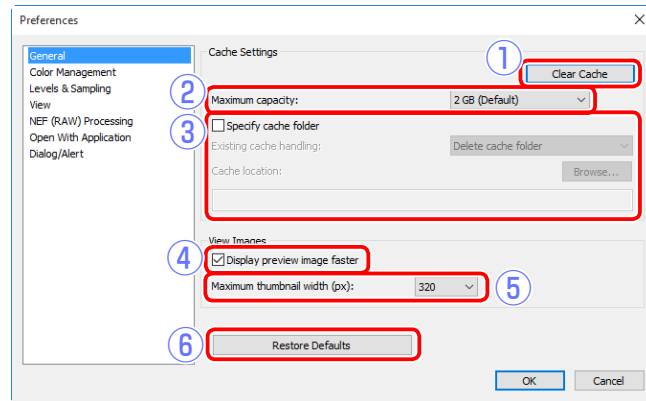
An 8 × 8 layout



Preferences

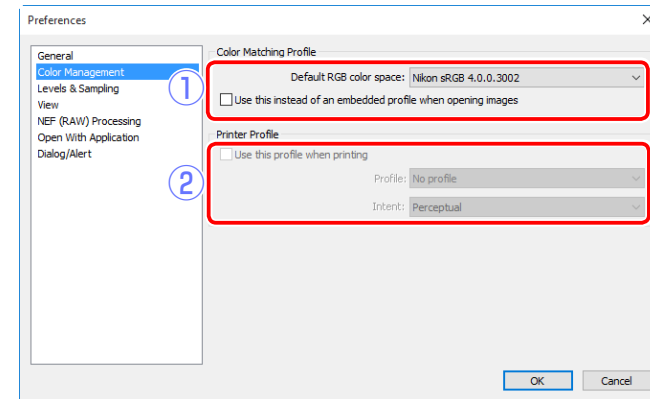
To modify the default behavior of Capture NX-D, select **Preferences...** in the **Edit** menu (or on Mac computers, the Capture NX-D menu).

General



- ① **Clear Cache:** Clear the cache.
- ② **Maximum capacity:** Select a cache size.
- ③ **Specify cache folder:** Select this option to choose a cache folder using the **Browse...** button. Use the **Existing cache handling** menu to choose what to do with the existing cache.
- ④ **Display preview image faster:** If this option is selected, Capture NX-D will generate preview data as modifications are made for faster preview display.
- ⑤ **Maximum thumbnail width:** Choose the maximum thumbnail width, in pixels ([page 10](#)).
- ⑥ **Restore Defaults:** Reset all items in the “General” tab to their default values.

Color Management



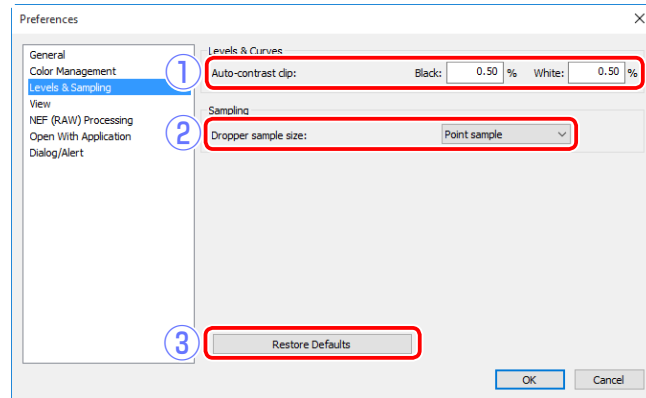
- ① **Default RGB color space:** Choose the default RGB color space for image display.
- ② **Use this profile when printing:** Select this option to choose a color profile for printing from the **Profile** menu. Choose the **Intent** from **Perceptual** and **Relative colorimetric**.

Intent

Perceptual maintains the relations between colors to produce results that seem natural to the human eye. The colors may however not be true to the original image data. **Relative colorimetric** maps colors not in the selected profile to the nearest available color. All colors in the gamut of the printer will be reproduced accurately.

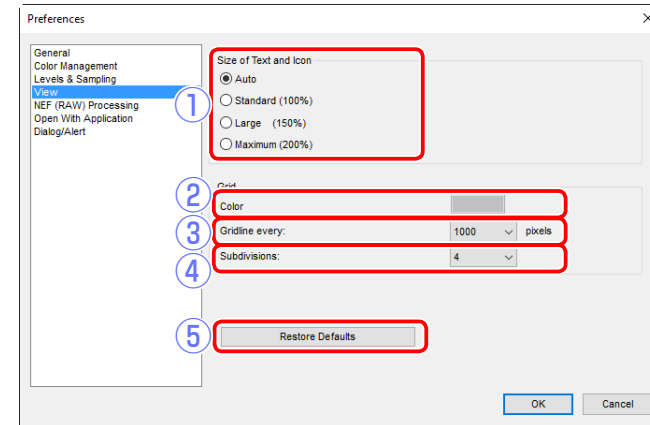


Levels & Sampling



- ① **Auto-contrast clip:** The levels and curves auto contrast option ([page 32](#)) increases contrast by setting the white and black points to exclude a set proportion of the brightest and darkest pixels in the image. Choose the percentage of pixels excluded by the new **Black** and **White** points.
- ② **Droppersamplesize:** Select the size of the area sampled by the gray point ([page 21](#)) and levels and curves ([page 32](#)) sampling controls. Choose from **Point sample** (a single pixel), **3×3 Average** (the average of an area 3 pixels square) and **5×5 Average** (the average of an area 5 pixels square).
- ③ **Restore Defaults:** Reset all items in the “Levels & Sampling” tab to their default values.

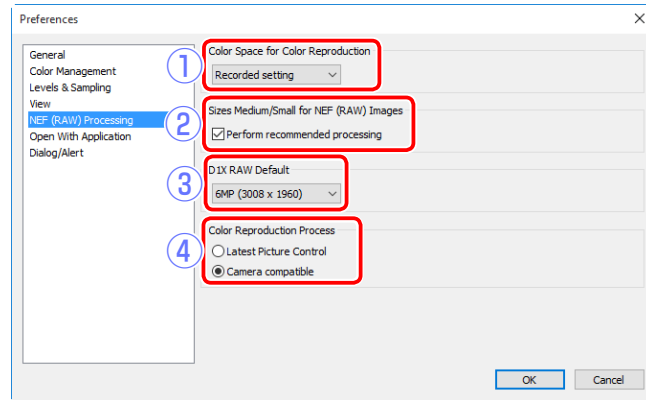
View



- ① **Size of Text and Icon:** Choose the size of the letters and icons in the user interface.
- ② **Color:** Choose a color for the reference grid.
- ③ **Gridline every:** Choose the grid spacing.
- ④ **Subdivisions:** Choose the number of subdivisions in each square.
- ⑤ **Restore Defaults:** Reset all items in the “View” tab to their default values.

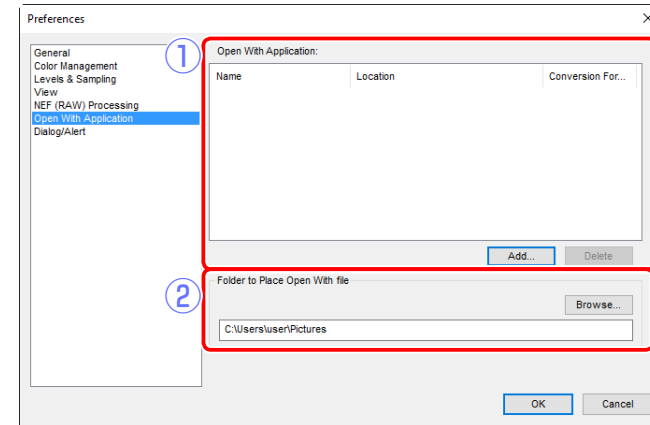


NEF (RAW) Processing



- ① **Color Space for Color Reproduction:** Choose the color space used for adjustments to RAW (NEF/NRW) images.
- ② **Sizes Medium/Small for NEF (RAW) Images:** Select this option for optimal processing when editing small and medium RAW (NEF/NRW) images.
- ③ **D1X RAW Default:** Choose the default display size for RAW (NEF) photos taken with the D1x. Choose from **6MP (3008 × 1960)** and **10MP (4016 × 2616)**.
- ④ **Color Reproduction Process:** Choose a color reproduction process ([page 22](#)).

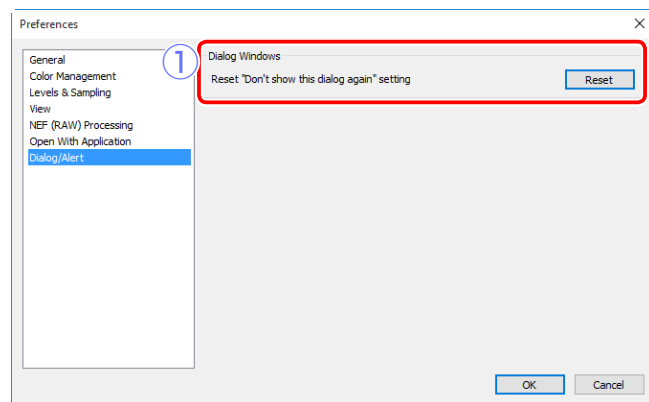
Open with Application



- ① **Open With Application:** Edit the list of applications that can be accessed via the **Open With** option in the **File** menu ([page 49](#)) and choose the format (**TIFF (16-bit)**, **TIFF (8-bit)**, or **JPEG**) used when images are opened in other applications.
- ② **Folder to Place Open With file:** Before being opened in other applications, images are converted to the format selected using **Open With Application**. Use this option to choose where the converted files are stored.



Dialog/Alert



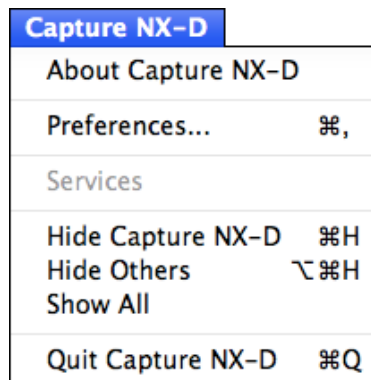
- ① **Dialog Windows:** Click **Reset** to reset the “Don’t show this dialog again” check boxes for all dialogs.



Menu Guide

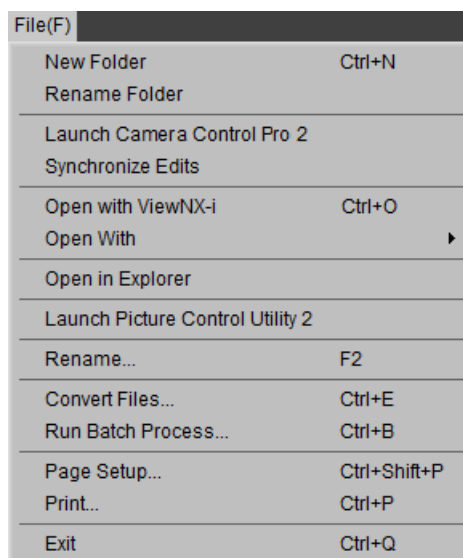
The Capture NX-D Menu (Mac Only)

- **About Capture NX-D:** Display the product version number.
- **Preferences:** Open the Capture NX-D preferences dialog ([page 45](#)).
- **Quit Capture NX-D:** Quit Capture NX-D.



The File Menu

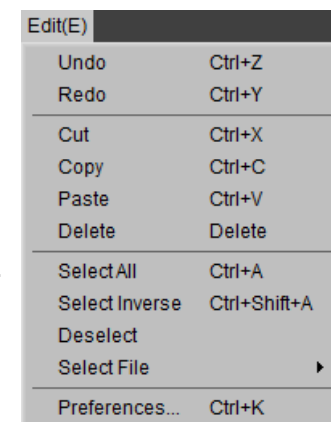
- **New Folder:** Create a new sub-folder in the current folder.
- **Rename Folder:** Rename the current folder.
- **Launch Camera Control Pro 2:** Launch Camera Control Pro 2.
- **Synchronize Edits:** Select this option to apply current settings to any images subsequently added to the current folder.
- **Open with ViewNX-i:** View the current image or images in ViewNX-i. The images are displayed in their current state including any changes made using Capture NX-D and, in the case of NEF/NRW (RAW) images, without conversion to TIFF. This option is only available if ViewNX-i is installed.
- **Open With:** Open the current image in another application. Use the **Open With Application** option to add applications to the menu ([page 47](#)).
- **Open in Explorer (Windows)/Show in Finder (Mac):** Open the current folder in the operating system file browser.



- **Launch Picture Control Utility 2:** Launch Picture Control Utility 2.
- **Rename:** Rename the current image.
- **Convert Files:** Convert the currently-selected image or images to JPEG or TIFF format ([page 36](#)).
- **Run Batch Process:** Perform batch processing ([page 40](#)).
- **Page Setup:** Adjust printer settings.
- **Print:** Print images ([page 42](#)).
- **Exit (Windows only):** Exit Capture NX-D.

The Edit Menu

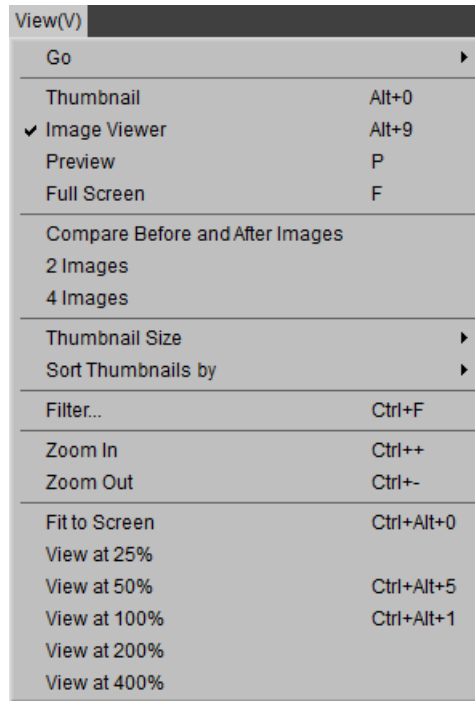
- **Undo:** Undo the most recent operation.
- **Redo:** Redo an operation after performing **Undo**.
- **Cut/Copy/Paste:** Cut, copy, or paste the current selection.
- **Delete:** Delete the current selection.
- **Select All:** Select all images in the current folder.
- **Select Inverse:** Select all images in the current folder that are not currently selected and deselect any images that are currently selected.
- **Deselect:** Deselect all images.
- **Select File:** Select all files in the current folder that match the criteria chosen in the **Select File** submenu.
- **Preferences (Windows only):** Open the Capture NX-D preferences dialog ([page 45](#)).





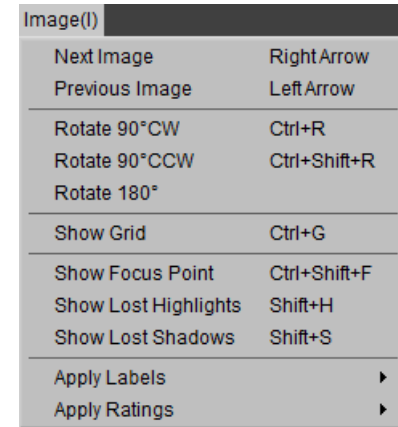
The View Menu

- **Go:** Navigate the folder hierarchy.
- **Thumbnail/Image Viewer/Preview/Full Screen:** Choose how images are displayed ([page 10](#)).
- **Compare Before and After Images/2 Images/4 Images:** Compare images ([page 13](#)). The **4 Images** option is available only on a computer with a 64-bit operating system and at least 4 GB of memory.
- **Thumbnail Size:** Choose the thumbnail size ([page 10](#)).
- **Sort Thumbnails by:** Sort thumbnails.
- **Filter:** Filter images according to selected criteria ([page 17](#)).
- **Zoom In/Zoom Out/Fit to Screen/View at 25%/View at 50%/View at 100%/View at 200%/View at 400%:** Zoom the preview in or out.

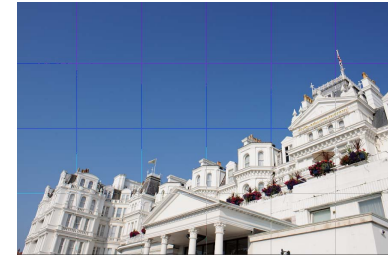


The Image Menu

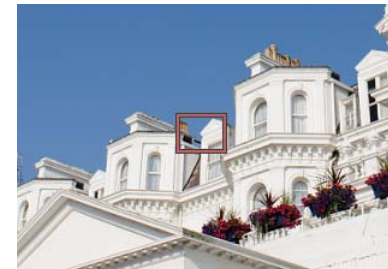
- **Next Image/Previous Image:** View the next or previous image in the current folder.
- **Rotate:** Rotate the current image 90 or 180 degrees.



- **Show Grid:** Display a grid over the preview.

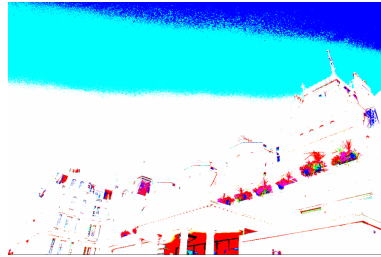


- **Show Focus Point:** Show the focus point in the preview display.



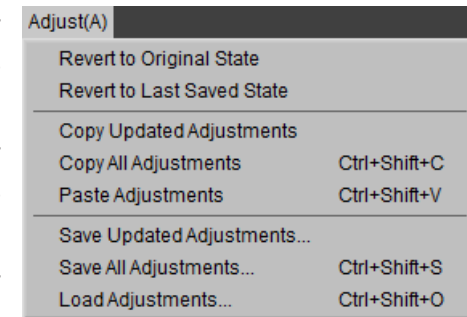


- **Show Lost Highlights:** View areas of the image with the maximum value for brightness and in which details may have been lost to overexposure (“washed out”). A different color is used to show the lost highlights for each of the RGB, red, green, and blue channels.
- **Show Lost Shadows:** View areas of the image with the minimum value for brightness and in which details may have been lost to underexposure. A different color is used to show the lost shadows for each of the RGB, red, green, and blue channels.
- **Apply:** Label ([page 16](#)) or rate ([page 15](#)) selected images.



The Adjust Menu

- **Revert to Original State:** Reset all image adjustments and restore the picture to its original state.
- **Revert to Last Saved State:** Initialize the settings file ([page 3](#)), cancelling all changes made in Capture NX-D.
- **Copy Updated Adjustments:** Copy only those adjustments that have been changed since the current folder was last opened.
- **Copy All Adjustments:** Copy all adjustments.
- **Paste Adjustments:** Apply to the current image adjustments copied using **Copy Updated Adjustments** or **Copy All Adjustments**.
- **Save Updated Adjustments:** Create a file containing only those adjustments that have been changed since the current folder was last opened.
- **Save All Adjustments:** Save all adjustments to a file.
- **Load Adjustments:** Load adjustments from a file created with **Save Updated Adjustments** or **Save All Adjustments** and apply them to the current image.



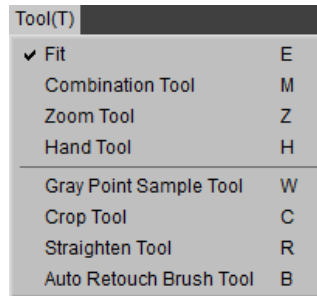
Using “Revert to Original State” with Images Modified in Other Applications

In the case of JPEG and TIFF images modified in Capture NX 2 or ViewNX 2, **Revert to Original State** reverts the image to its last saved state.



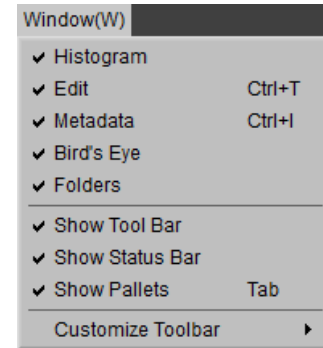
The Tool Menu

- **Fit:** Double-click the display to alternately zoom the preview to fit the palette and zoom to a 100% view.
- **Combination Tool:** As above, except that the preview can be scrolled by dragging the cursor.
- **Zoom Tool:** Click to zoom in. To zoom out, click while pressing the **Alt** key (or on Mac computers, the **option** key).
- **Hand Tool:** Drag to scroll the preview.
- **Gray Point Sample Tool:** Set white balance by sampling the preview ([page 21](#)).
- **Crop Tool:** Crop the preview ([page 37](#)).
- **Straighten Tool:** Straighten the image in the preview palette ([page 30](#)).
- **Auto Retouch Brush Tool:** Remove dust and scratches ([page 39](#)).



The Window Menu

- **Histogram/Edit/Metadata/Bird's Eye/Folders:** View or hide the selected palette.
- **Show Tool Bar:** View or hide the toolbar.
- **Show Status Bar:** View or hide the status bar.
- **Show Palettes:** View or hide all palettes.
- **Customize Toolbar:** Customize the toolbar ([page 8](#)).



The Help Menu

- **Capture NX-D Help:** View online help.
- **Check for Updates:** Check for updates to Capture NX-D.
- **About Capture NX-D** (Windows only): Display the product version number.

