Nikon

Nikon Capture 2

User's Manual

Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

Trademark Information

Adobe and Acrobat are registered trademarks, and Photoshop is a trademark, of Adobe Systems Inc. Apple, the Apple logo, Macintosh, and FireWire are registered trademarks of Apple Computer, Inc. Finder and Power Macintosh are trademarks of Apple Computer, Inc. CompactFlash is a trademark of SanDisk Corporation. i486 and Pentium are trademarks of Intel Corporation. IBM and IBM PC/AT are registered trademarks of International Business Machines Corporation. Internet is a trademark of Digital Equipment Corporation. Netscape and Netscape Navigator are registered trademarks of Netscape Communications Corporation. Windows and MS-Windows are trademarks of Microsoft corporation. Internet Explorer is a product of Microsoft corporation. All other brand or product names mentioned in this manual are the trademarks or registered trademarks of their respective holders.

☑ Warning!

Do not play the installer CD-ROM provided with this product on an audio CD player or other device not intended for CD-ROMs. Playing the CD-ROM on an audio CD player could damage the speakers or result in hearing loss.

Table of Contents

Image Adjustment   93

Batch Processing   131

Capturing Photographs   139

Camera Control   163

Preferences 193

Reference 203

Appendices 219

Overview

Welcome to Nikon Capture software for the D1, D1x, and D1H digital cameras (referred to below as "your Nikon digital camera" or "camera"). Nikon Capture 2 allows you to view and edit images taken with your Nikon digital camera, including images taken at a setting of RAW. With the camera connected to a computer via its IEEE 1394 interface, you can upload photographs to the computer as they are taken.

Nikon Capture 2 can not be used to upload to a computer images already stored on the camera memory card. To copy images from a memory card to a computer, use Nikon View 4 or insert the memory card in a card reader or PC card slot.

Read this manual before using the software, and keep it where all those who use the software will read it.

Package Contents

Before using this product, check that the package contains the items listed below. Should you notice that anything is missing or damaged, contact your retailer or Nikon representative.
- Nikon Capture 2 installer CD
- *Nikon Capture 2 User's Manual* (this manual)
- User registration card

About This Manual

This manual describes how to install and use Nikon Capture 2.

Background Knowledge
This manual assumes familiarity with operations common to the Macintosh and Windows operating systems. Refer to the documentation provided with your operating system when in doubt about the meaning of the terms used here.

Symbols and Conventions Used in This Manual
The following symbols and conventions are used in this manual:

This icon marks cautions, information that you should read before using this software to prevent damage to your Nikon digital camera.

This icon marks notes, information that you should read before this software.

This icon marks tips, additional information you may find helpful when using this software.

This icon indicates that more information is available elsewhere in this manual.

Bold text marks button names and menu commands.

Illustrations

This manual is for use with both Macintosh and Windows versions of this product. While the majority of the illustrations in this manual show the Windows version, save where otherwise noted the operations described apply to both operating systems. Depending on your operating system, some dialogs and menus may differ slightly from those shown here. For information on operations specific to your OS, refer to the documentation provided with your operating system.

ReadMe File

Be sure to read the ReadMe file on the Nikon Capture installer CD, as it may contain important information that could not be included in this manual.

Welcome to Nikon Capture!

Using Nikon Capture 2, you can view and edit images taken with Nikon D1, D1x, and D1H digital cameras, including images taken at a setting of RAW. With any of these camera connected to a computer via its IEEE 1394 interface, you can upload photographs to the computer as they are taken, edit them, and save them to disk. Nikon Capture 2 also offers a camera control function, and its capacity to manipulate highly versatile, twelve-bit RAW data allows you to take advantage of the full potential of your Nikon digital camera.

Principle Features

The main advantages offered by Nikon Capture 2 are listed below.

Image Enhancement and Support for RAW Data

Nikon Capture 2 can be used to open photographs taken with the camera and adjust brightness and contrast, color balance, and sharpness. It also supports adjustments to white balance, tone curves, and color settings for RAW images, features unique to Nikon Capture 2.

File Format Can Be Chosen According to Task at Hand

Using Nikon Capture 2, you can save images in a file format suited to the task at hand. RAW, TIFF, and JPEG images can be saved in Nikon's unique Nikon Electronic Image Format (NEF). NEF stores any enhancements to the image separately from the original image data, ensuring that original data is unaffected by changes to image enhancement options or compression when the image is saved in another format. Images can also be saved in formats supported by other imaging applications.

Direct Capture

When the camera is connected to a computer via its IEEE 1394 interface, photographs can be captured to the computer's hard disk as they are taken. Photos captured from the camera can be viewed on the computer monitor, making Nikon Capture an invaluable tool for studio photography. The high-speed IEEE 1394 interface allows even large-volume, high-quality images to load quickly.

Camera Control Function

Nikon Capture 2 offers a camera control function that allows you to take photographs and adjust camera settings from your computer while the camera is connected. It also supports time-lapse photography, which can not be performed when the camera is used alone. Images taken using Nikon Capture 2 are saved directly to the computer's hard disk, not to the camera memory card.

Saved Settings

Camera control and image enhancement settings can be saved and recalled as desired.

Batch Processing

Batch processing allows images on the computer's hard disk or captured directly from the camera via an IEEE 1394 connection to be processed automatically according to image enhancement settings chosen in advance.

Installing Nikon Capture 2

This chapter describes the process of installing Nikon Capture 2, registering your camera with the system (Windows only), and uninstalling Nikon Capture 2.

Installing Nikon Capture 2—Windows

This section describes the process of installing Nikon Capture 2 on a computer running Windows 98 Second Edition (SE) or later. Macintosh users can proceed to "Installing Nikon Capture 2—Macintosh" (🔖 pg. 53).

System Requirements

Before installing Nikon Capture 2, make sure that your system satisfies the following requirements:

CPU	Pentium II or Celeron processor or above (faster processors are recommended for image processing)
OS	Pre-installed versions of Windows 98 Second Edition (SE), Windows Me, Windows 2000 Professional or later
RAM	A minimum of 64 MB available to Nikon Capture 2 (128 MB or more recommended)*
Hard-disk space	While running, Nikon Capture 2 requires a minimum of 40 MB free hard disk space (200 MB or more recommended)*
Video Resolution	VGA (640 × 480 pixels) or better, sixteen-bit color or higher
CD-ROM drive	Required for installation
Interface	Open Host-Controller Interface (OHCI) compliant IEEE 1394 interface board for connection to camera†, IEEE 1394 cable

* The more images captured, the larger the amount of memory and disk space required. For memory requirements when running Nikon Capture 2 at the same time as other software, see the documentation for the software in question.

† The camera may not function as expected when connected to an IEEE 1394 hub. For information on boards or cards that have been tested and approved for use, see our technical support websites.

Installation

This section describes how to install the Windows version of Nikon Capture 2. Before starting installation:

- Check the amount of free disk space remaining
- Exit all applications, including any virus-checking software that may be running
- Confirm that the camera is NOT connected to the computer at this time
- Uninstall Nikon View DX (if installed) and any earlier versions of Nikon Capture

You are now ready to begin installation.

1 Turn the computer on.
Turn the computer on and wait for Windows to start up.

2 Insert the Nikon Capture 2 CD into the CD-ROM drive.

🖉 **Windows 2000**

When installing Nikon Capture 2 under Windows 2000, log in to the Administrator account.

3 Click **Nikon Capture 2**.

When the Nikon Capture 2 CD is inserted in the CD-ROM drive, the Nikon Capture 2 Welcome window will open automatically. Click **Install Nikon Capture 2**.
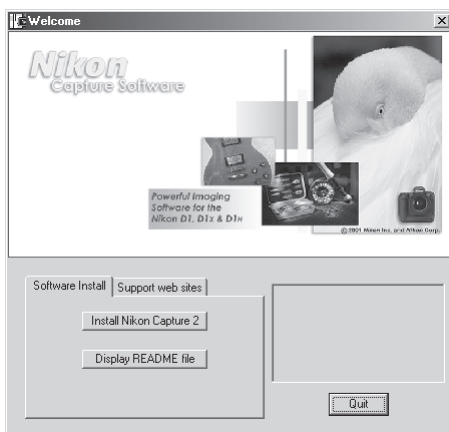
4 Read the license agreement.

A license agreement will be displayed. If you agree to the terms of the license agreement, click **Yes** to continue to the next step.
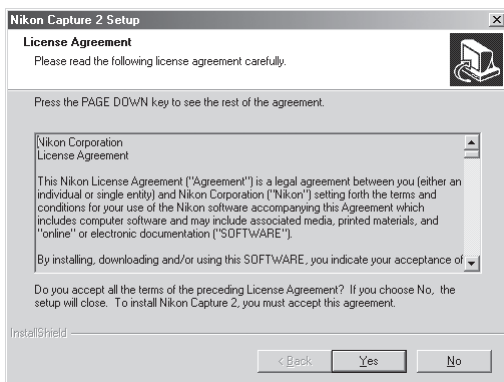
✏ The ReadMe File

Before installing Nikon Capture 2, be sure to read the ReadMe file, which may contain important information that could not be included in this manual.

🔍 If the Welcome Dialog Does Not Appear

If the Welcome dialog does not appear when the CD-ROM is inserted in the CD-ROM drive:
1. Double-click the My Computer icon
2. In the My Computer window, click the CD-ROM drive icon with the right mouse button
3. Select **Autorun** from the menu that appears

5 Enter user information to personalize your copy of Nikon Capture 2.

The User Information dialog will be displayed. After entering your name, place of work, and the serial number for your copy of Nikon Capture 2, click **Next** to proceed to the next step.
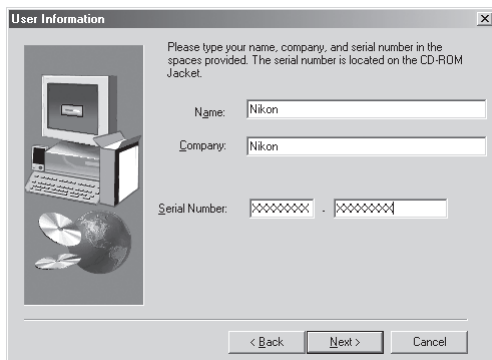
6 Confirm that the user information is correct.

If the information in the Registration Confirmation dialog is correct, click **Yes** to proceed to Step 7.
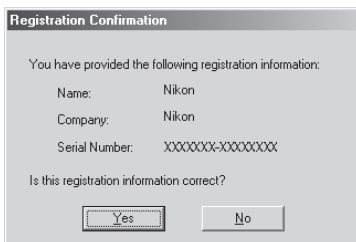
🔍 **Serial Number**

The serial number may be found on the CD case. The **Next** button in the User Information dialog will only be available when the serial number has been entered correctly.

---

7 Choose a destination for Nikon Capture 2.

In the Choose Destination Location dialog, choose the folder to which Nikon Capture 2 will be installed. To accept the default destination displayed in the Destination Folder section, click **Next**. To choose a new folder, click **Browse…** and navigate to the desired location.
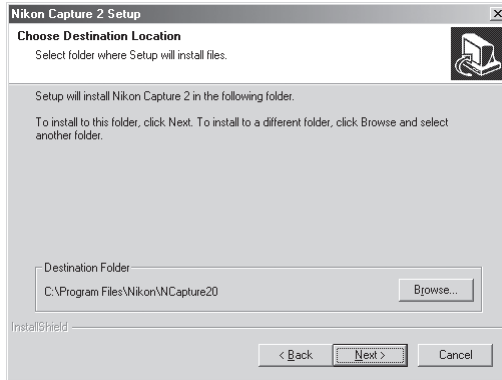
After the installer copies the program files to the hard disk, the Select Application dialog will be displayed.

🔍 **Nikon Scan 3**

If Nikon Scan 3 is installed, you will be prompted to choose whether to associate some of the extensions used in Nikon Scan 3 with Nikon Capture 2. Click **Yes**.
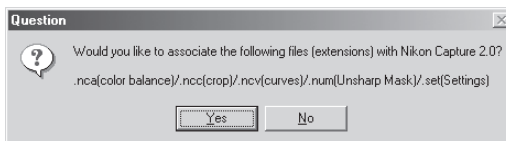
8 Choose the application that will be used to open Nikon Capture 2 files saved in JPEG, TIFF, or BMP format.

Once a captured image has been saved in a format other than NEF, it can not be opened again in Nikon Capture 2. Once you have chosen a destination location and the installer has copied the program files to the hard disk, a dialog will be displayed where you can select the application that will be used to open images saved from Nikon Capture 2 in other formats. To select the application at a later date, choose **Select the application later**. After making your selection, click **Next** to proceed to the following step.
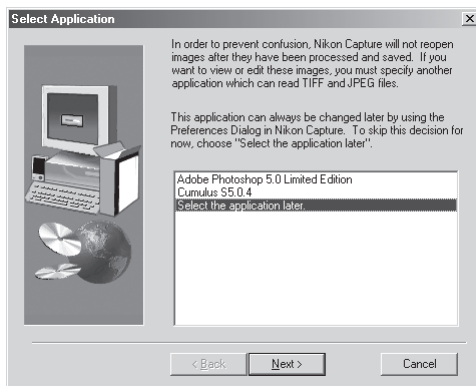
🔍 **Choosing an Application to View JPEG, TIFF, and BMP Files**

If you choose **Select the application later**, you can choose the application used to open files of these types from the File Locations tab of the Preferences dialog (🗓 pg. 197) after installation is complete. The selected application will start when:
• you attempt to open a file saved in JPEG, TIFF, or BMP format
• you check **Open in External Application** in the Save As dialog (🗓 pg. 91)

🔍 **NEF and YCbCr-TIFF Images**

Files saved in NEF and the camera's YCbCr-TIFF format can only be opened in Nikon View 4 or Nikon Capture 2 (if you have installed the Nikon NEF and Nikon YCC plug-ins provided with Nikon View 4, you can also open NEF and YCbCr-TIFF images in Adobe Photoshop version 5.0 or later, Photoshop LE excluded).

9 Select the initial color-space profile.

Nikon Capture 2 uses color-space profiles to ensure consistent color reproduction. As part of the installation process, you can choose the default color-space profile that will be used when you first start Nikon Capture 2. A new profile can be chosen at any time from the Nikon Capture 2 Preferences dialog.

Once you have selected the application that will be used to open Nikon Capture 2 files saved in JPEG, TIFF, or BMP formats, the dialog shown below will be displayed. To choose a profile that matches the camera color mode, click **D1** or **D1x or D1H**. To choose from a list of profiles supported in Nikon Capture 2, click **Manual Setting**.
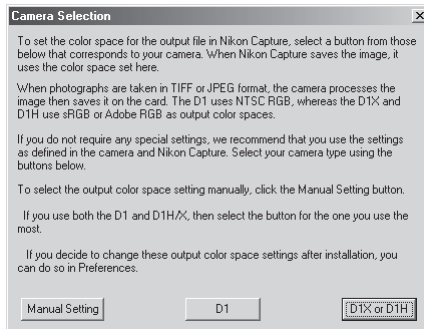
D1

Clicking **D1** sets the initial color-space profile to NTSC (1953).

D1x or D1H

Clicking **D1x or D1H** displays the dialog shown below, where you can choose the initial color-space profile from "**Setting Adobe RGB**" and "**Setting sRGB**."

✐　**Before Choosing a Color Space Profile**

Before choosing a color-space profile, make sure that your monitor has been properly set up.

Manual Setting
Clicking **Manual Setting** displays the dialog shown below. Click **Continue**.

⊞ Choosing a Color Space Profile

When choosing a color-space profile, you should bear two things in mind: the *gamma value* for your platform and the *gamut* (range) of colors required for the task at hand.

Gamma is a fundamental characteristic of imaging systems, used to adjust the brightness of scanned images so that they display correctly on your monitor. The first six profiles in the profile list have a gamma value of 2.2, which is the de facto standard for Windows. The last two have a gamma value of 1.8, the default value for the Macintosh. Select a profile appropriate to the platform on which the image is to be displayed.

The other factor to bear in mind when selecting a profile is the *gamut*, or range of colors you will need for the task at hand. If you are not planning to make fine adjustments to color, a profile with a narrow range of colors is suitable. Note, however, that a narrow gamut may produce colors that are too "saturated," or vivid. If you intend to fine-tune color, contrast, and brightness using an editing tool such as the Curves window, choose a profile that offers a wide range of colors. Without editing, however, such a profile may produce "flat," low-contrast images.

Profiles within each of the two groupings are ordered by the size of their gamut. Those with a narrow gamut are listed at the top, those with a wide gamut at the bottom.

A list of color-space profiles will be displayed.

Choose a profile for use as the initial color-space profile. The effects of the color range and gamma setting for each profile can be seen in the image to the right of the profile list. Select a profile and click **OK**, or click **Using the Wizard** to choose a color-space profile with the help of a wizard.

Clicking **Using the Wizard** displays the dialog shown below:

Click **Windows** to display a Windows wizard, **Macintosh** to display a wizard for Macintosh computers. Choose a color-space profile by following the on-screen instructions.

10 Restart the computer.
When installation is complete, the dialog shown below will be displayed. The computer must be restarted before you can use Nikon Capture 2. To restart the computer immediately, select **Yes, I want to restart my computer now** before clicking **Finish**.
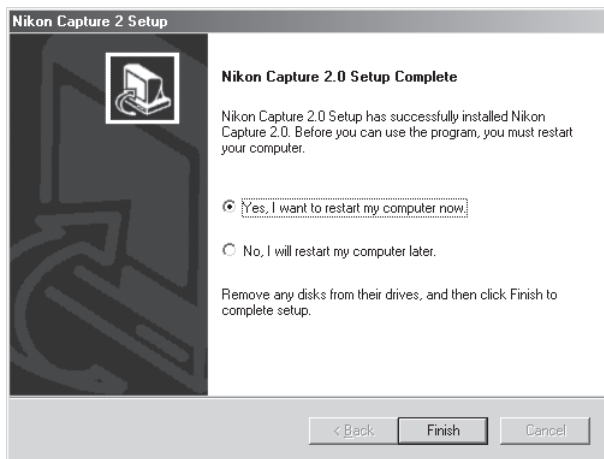
Device Registration

Before you will be able to use your D1, D1x, or D1H digital camera with Nikon Capture 2, you must register the device with the system. If you have already registered the device for use with Nikon View 4 or will not be connecting the camera to the computer, you will not need to register the camera now.

Before registering your camera, check that the OHCI-compliant IEEE 1394 interface board is correctly registered with the system. Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed. If you are using Windows Millennium Edition (Me) or Windows 98 Second Edition (SE), click the Device Manager tab.
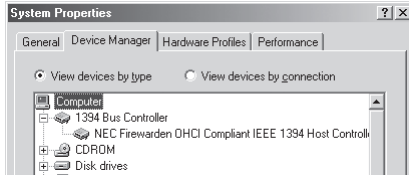
If you are using Windows 2000, click the Hardware tab and then click the **Device Manager…** button in the Device Manager section.
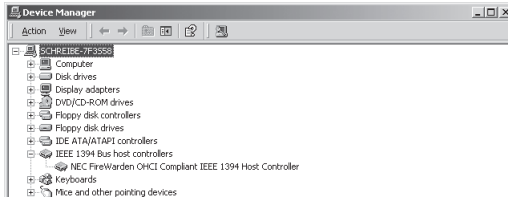
If the board is correctly registered with the system, it will be listed under "1394 Bus Controller". If the "1394 Bus Controller" entry is not displayed, follow the instructions in the manual provided with the board to ensure that the drivers are properly installed.

Registering the Camera under Windows Millennium Edition (Me)

1 Install Nikon Capture 2 and restart the computer. Once Windows has restarted, turn the camera on, make sure that the mode dial is set to PC, and then connect the camera to the computer using an IEEE 1394 cable.

2 The opening dialog for the Windows hardware wizard will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive and click **Next** after confirming that **Automatic search for a better driver (Recommended)** is displayed in the hardware wizard. The wizard will automatically install the necessary drivers.
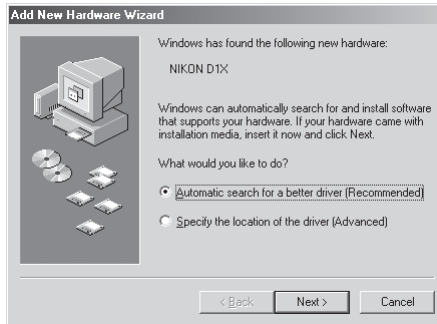
If the Welcome dialog appears when the CD inserted in the drive, close the dialog by clicking the **Exit** button.

🔍 If the Hardware Wizard Does Not Appear

If the hardware wizard is not displayed when the camera is connected, proceed to "What to Do If the Hardware Wizard Is Not Displayed" (📖 pg. 20).

🔍 If Nikon View DX or Earlier Versions of Nikon Capture Are Installed

---

If you are already using the D1 with existing copies of Nikon View DX or Nikon Capture, proceed to "Updating Drivers for the D1" (📖 pg. 23).

---

3 The dialog shown below will be displayed; click **Finish**.

4 Once registration is complete, check that the camera has been correctly registered with the system. Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.

5 The Device Manager sheet will be displayed. After confirming that "Nikon 1394 Protocol Device" is listed in the Device Manager, click the "+" sign to its left.
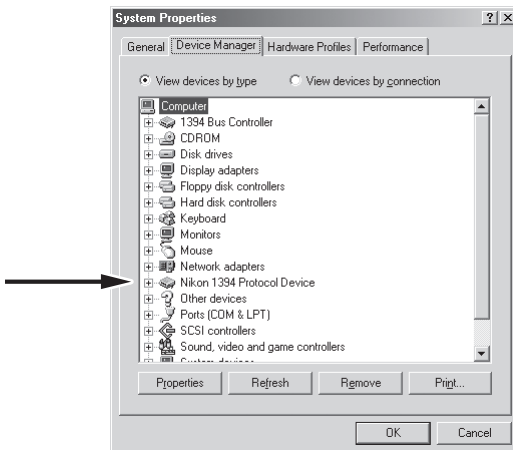
6 After confirming that "Nikon Digital Camera D1 Series" is listed under "Nikon 1394 Protocol Device," double click the listing to open the Properties window.

7 The Nikon Digital Camera D1 Series Properties dialog will be displayed. Click the General tab and confirm that "This device is working properly." appears under "Device status."

This completes device registration for your Nikon digital camera.

What to Do If the Hardware Wizard Is Not Displayed

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.

2 The Device Manager sheet will be displayed. Double-click the listing for your camera appearing under "Unknown devices" or "Other devices."

3 The camera properties dialog will be displayed. Open the General tab and click **Reinstall Driver**.

4 The Windows update device driver wizard will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Confirm that **Automatic search for a better driver (Recommended)** is selected and click **Next**. The wizard will automatically update the device drivers.

If the Welcome dialog appears when the CD is inserted in the drive, close the dialog by clicking the **Exit** button.

5 The dialog shown below will be displayed; click **Finish**.

6 Confirm that the camera has been registered with the system as described in steps 4–7 of "Registering the Camera under Windows Millennium Edition (Me)" (📖 pp. 18–19).

Updating Drivers for D1

If you are already using the D1 with Nikon View DX or an earlier version of Nikon Capture, you will need to update the camera drivers.

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.

2 The Device Manager sheet will be displayed. Under the entry "Nikon 1394 Device," double-click "Nikon Digital Camera D1."

3 The Nikon Digital Camera D1 Properties dialog will be displayed. Open the Driver tab and click **Update Driver…**.

4 The Windows Update Device Driver Wizard will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Confirm that **Automatic search for a better dirver** is selected and click **Next**. The wizard will automatically update the device drivers.

If the Welcome dialog appears when the CD-ROM is inserted, close the dialog by clicking the **Exit** button.

5 The dialog shown below will be displayed. Select the file "\INF\NIKONDX.INF" on the CD-ROM drive and click **OK**.
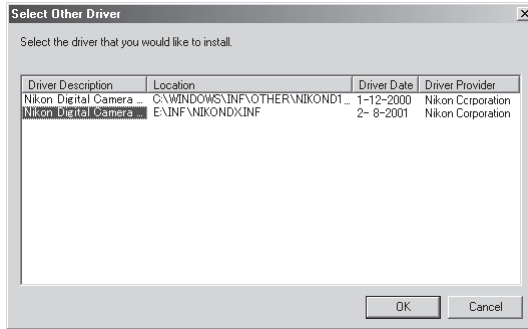
6 The dialog shown below will be displayed; click **Finish**.

7 Confirm that the camera has been registered with the system as described in steps 4–7 of "Registering the Camera under Windows Millennium Edition (Me)" (👁 pp. 18–19).

Registering the Camera under Windows 98 Second Edition (SE)

1 Install Nikon Capture 2 and restart the computer. Once Windows has restarted, turn the camera on, make sure that the mode dial is set to PC, and then connect the camera to the computer using an IEEE 1394 cable.

2 The opening dialog for the Windows hardware wizard will be displayed. Click **Next**.

3 Select the search option and click **Next**.

🔍 **If the Hardware Wizard Does Not Appear**

If the hardware wizard is not displayed when the camera is connected, proceed to "What to Do If the Hardware Wizard Is Not Displayed" (📖 pg. 31).

🔍 **If Nikon View DX or Earlier Versions of Nikon Capture Are Installed**

If you are already using the D1 with existing copies of Nikon View DX or Nikon Capture, proceed to "Updating Drivers for the D1" (📖 pg. 35).

4 Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **Specify a location** and click **Browse**.

If the Welcome dialog appears when the CD is inserted in the drive, close the dialog by clicking the **Exit** button.

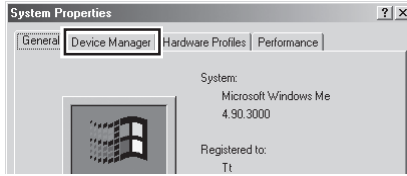**5** The dialog shown below will be displayed. Navigate to the Inf folder on the Nikon Capture 2 CD (Ncapture2) and click **OK**.
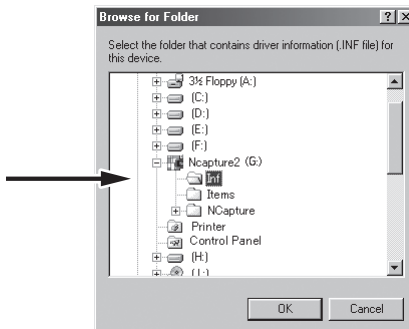
6 Confirm that "(Drive letter for CD-ROM drive):\Inf" is displayed in the text box under **Specify a location** and click **Next**.

7 A dialog will be displayed stating that Windows has found the drivers for "Nikon Digital Camera D1 Series"; click **Next**.

If the message, "Windows was unable to find a suitable driver for this device," is displayed, this may indicate that the Nikon Capture 2 CD was not correctly inserted in the CD-ROM drive or that the correct search location was not specified. Click **Back** to return to the dialog shown in Step 6, where you can confirm that the correct location has been specified.

8 The dialog shown below will be displayed; click **Finish**.

9 Once registration is complete, check that the camera has been correctly registered with the system. Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.
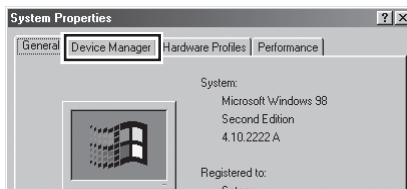
10 The Device Manager sheet will be displayed. After confirming that "Nikon1394 Protocol Device" is listed in the Device Manager, click the "+" sign to its left.
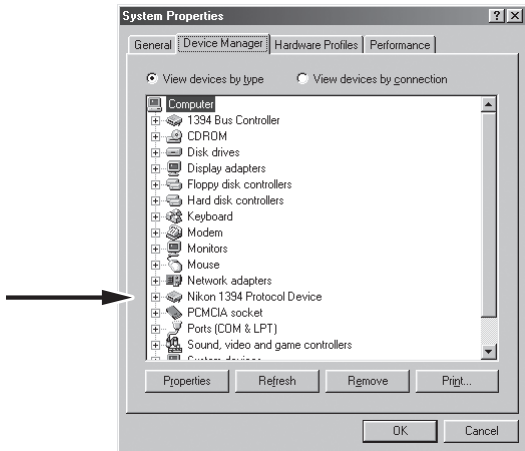
11 After confirming that "Nikon Digital Camera D1 Series" is listed under "Nikon 1394 Protocol Device," double click the listing to open the Properties window.

12 The Nikon Digital Camera D1 Series Properties dialog will be displayed. Click the General tab and confirm that "This device is working properly" appears under "Device status."

This completes device registration for your Nikon digital camera.

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.

2 The Device Manager sheet will be displayed. Double-click the listing for your camera appearing under "Unknown devices" or "Other devices."

3 The camera properties dialog will be displayed. Open the General tab and click **Reinstall Driver**.

31

4 The Windows Update Device Driver Wizard will be displayed; click **Next**.

5 The dialog shown below will be displayed. Select **Search for the best driver for your device (Recommended)** and click **Next**.

6 The dialog shown below will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **Specify a location** and click Browse.

If the Welcome dialog appears when the CD inserted in the drive, close the dialog by clicking the **Exit** button.

7 The dialog shown below will be displayed. Navigate to the Inf folder on the Nikon Capture 2 CD (Ncapture2) and click **OK**.

8 Confirm that "(Drive letter for CD-ROM drive):\Inf" is displayed in the text box under **Specify a location** and click **Next**.

9 A dialog will be displayed stating that Windows has found the drivers for "Nikon Digital Camera D1 Series"; click **Next**.

If the message, "Windows was unable to find a suitable driver for this device," is displayed, this may indicate that the Nikon Capture 2 CD was not correctly inserted in the CD-ROM drive or that the correct search location was not specified. Click **Back** to return to the dialog shown in Step 8, where you can confirm that the correct location has been specified.

10 The dialog shown below will be displayed; click **Finish**.

11 Confirm that the camera has been registered with the system as described in steps 9–12 of "Registering the Camera under Windows Second Edition (SE)" (📙 pp. 28–30).

Updating Drivers for D1

If you are already using the D1 with Nikon View DX or an earlier version of Nikon Capture, you will need to update the camera drivers.

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears. The System Properties dialog will be displayed; click the Device Manager tab.

2 The Device Manager sheet will be displayed. Under the entry "Nikon 1394 Device," double-click "Nikon Digital Camera D1."

3 The Nikon Digital Camera D1 Series Properties dialog will be displayed. Open the Driver tab and click **Update Driver…**.

4 The Windows Update Device Driver Wizard will be displayed; click **Next**.

5 The dialog shown below will be displayed. Select **Search for a better driver than the one your device is using now. (Recommended)** and click **Next**.

6 The dialog shown below will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **Specify a location** and click **Browse…**.

If the Welcome dialog appears when the CD-ROM is inserted, close the dialog by clicking the **Exit** button.

7 The dialog shown below will be displayed. Navigate to the Inf folder on the Nikon Capture 2 CD (Ncapture2) and click **OK**.

8 Confirm that "(Drive letter for CD-ROM drive):\Inf" is displayed in the text box under **Specify a location** and click **Next**.

9 A dialog will be displayed stating that Windows has found the drivers for "Nikon Digital Camera D1 Series"; click **Next**.

If the message, "Windows was unable to find a suitable driver for this device," is displayed, this may indicate that the Nikon Capture 2 CD was not correctly inserted in the CD-ROM drive or that the correct search location was not specified. Click **Back** to return to the dialog shown in Step 8, where you can confirm that the correct location has been specified.

10 The dialog shown below will be displayed; click **Finish**. If a message is displayed prompting you to restart Windows, click **Restart**.

11 Confirm that the camera has been registered with the system as described in steps 9–12 of "Registering the Camera under Windows Second Edition (SE)" (👹 pp. 28–30).

Registering the Camera under Windows 2000

1 Install Nikon Capture 2 and restart the computer. Once Windows has restarted, turn the camera on, make sure that the mode dial is set to PC, and then connect the camera to the computer using an IEEE 1394 cable.

2 The opening dialog for the Windows hardware wizard will be displayed; click **Next**.

3 Select the search option and click **Next**.
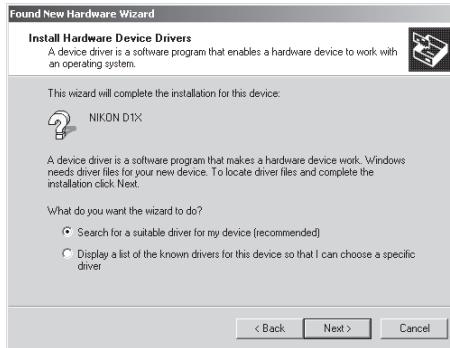
⌕ If the Hardware Wizard Does Not Appear

If the hardware wizard is not displayed when the camera is connected, proceed to "What to Do If the Hardware Wizard Is Not Displayed" (👾 pg. 43).

⌕ If Nikon View DX or Earlier Versions of Nikon Capture Are Installed

If you are already using the D1 with existing copies of Nikon View DX or Nikon Capture, proceed to "Updating Drivers for the D1" (👾 pg. 47).

✎ Logging On

When registering the camera under Windows 2000, log in to the Administrator account.

---

4 Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **CD-ROM drives** and click **Next**.

If the Welcome dialog appears when the CD inserted in the drive, close the dialog by clicking the **Exit** button.

5 The dialog shown below will be displayed; click **Next**.
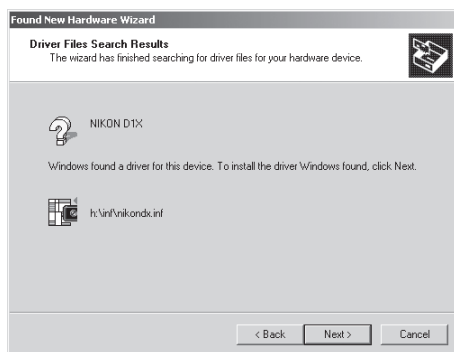
If the message, "Windows was unable to find a suitable driver for this device," is displayed, this may indicate that the Nikon Capture 2 CD was not correctly inserted in the CD-ROM drive or that the correct search location was not specified. Click **Back** to return to the dialog shown in Step 4, where you can confirm that the correct location has been specified.

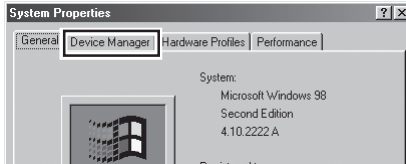**6** The dialog shown below will be displayed; click **Finish**.

7 Once registration is complete, check that the camera has been correctly registered with the system. Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears to display the System Properties dialog. Open the Hardware tab and click the **Device Manager…** button in the Device Manager section.
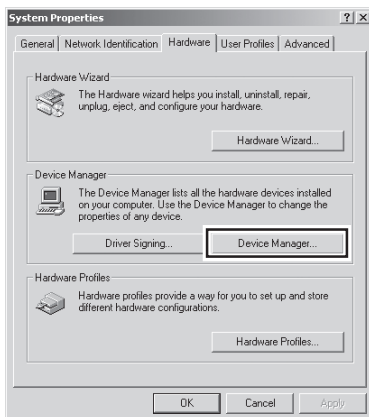
8 The Device Manager will be displayed. After confirming that "Nikon 1394 Protocol Device" is listed in the Device Manager, click the "+" sign to its left.
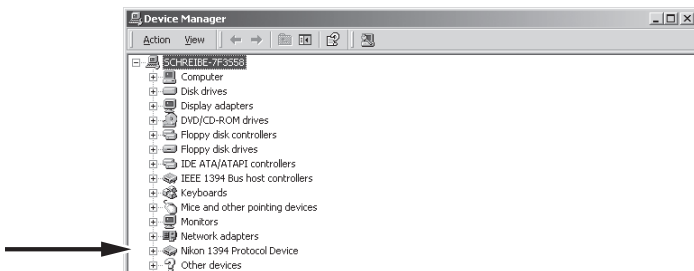
9 After confirming that "Nikon Digital Camera D1 Series" is listed under "Nikon 1394 Protocol Device," double-click the listing to open the Properties window.
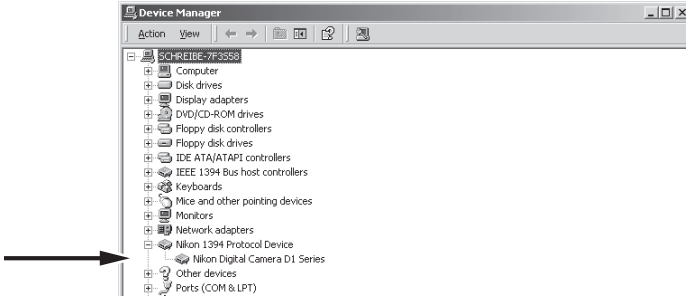
10 The Nikon Digital Camera D1 Series Properties dialog will be displayed. Click the General tab and confirm that "This device is working properly." appears under "Device status."

This completes device registration for your Nikon digital camera.

What to Do If the Hardware Wizard Is Not Displayed

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears to display the System Properties dialog. Open the Hardware tab and click the **Device Manager…** button in the Device Manager section.
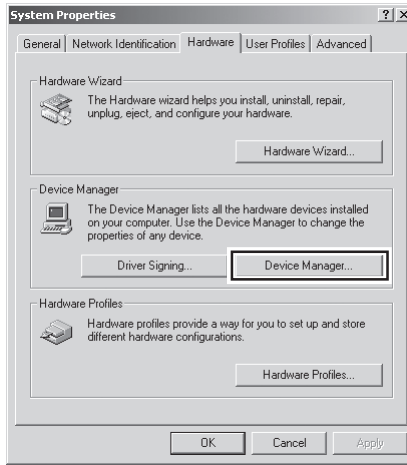
2 The Device Manager will be displayed. Double-click the listing for your camera that appears under "Unknown devices" or "Other devices".
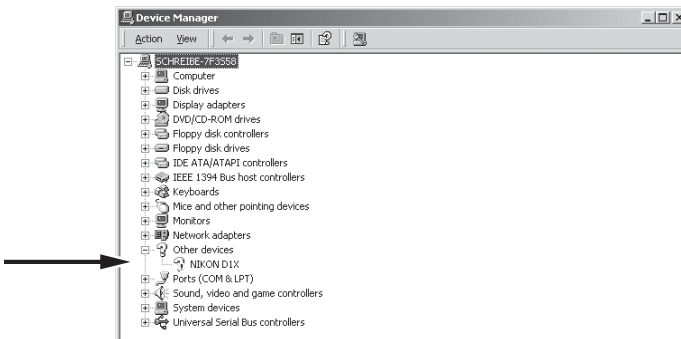
3 Open the General tab and click **Reinstall Driver…**.
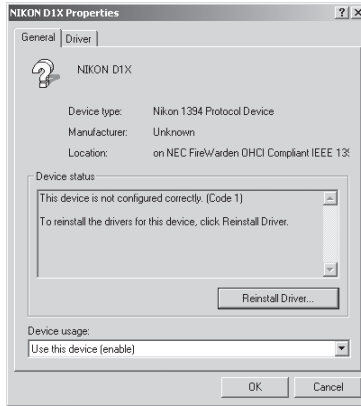
4 The Windows Upgrade Device Driver Wizard will be displayed; click **Next**.
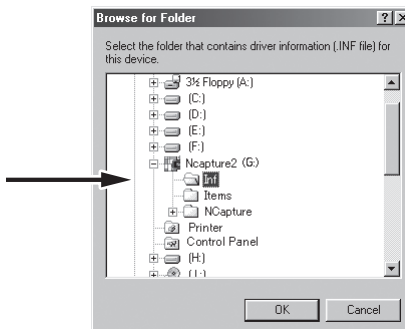

5 Select the search option and click **Next**.

6 The dialog shown below will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **CD-ROM drives** and click **Next**.

If the Welcome dialog appears when the CD inserted in the drive, close the dialog by clicking the **Exit** button.

7 The dialog shown below will be displayed; click **Next**.

If the message, "Windows was unable to find a suitable driver for this device," is displayed, this may indicate that the Nikon Capture 2 CD was not correctly inserted in the CD-ROM drive or that the correct search location was not specified. Click **Back** to return to the dialog shown in Step 6, where you can confirm that the correct location has been specified.

8 The dialog shown below will be displayed; click **Finish**.

**9** Confirm that the camera has been registered with the system as described in steps 7–10 of "Registering the Camera under Windows 2000" (📖 pp. 41–42).

Updating Drivers for D1
If you are already using the D1 with Nikon View DX or an earlier version of Nikon Capture, you will need to update the camera drivers.

1 Click the My Computer icon on the desktop with the right mouse button and select **Properties** from the menu that appears to display the System Properties dialog. Open the Hardware tab and click the **Device Manager…** button in the Device Manager section.

2 The Device Manager will be displayed. Under the entry "Nikon 1394 Protocol Device," double-click "Nikon Digital Camera D1."

✐ **Logging On**

When registering the camera under Windows 2000, log in to the Administrator account.

---

3 The Nikon Digital Camera D1 Properties dialog will be displayed. Open the Driver tab and click **Update Driver…**.
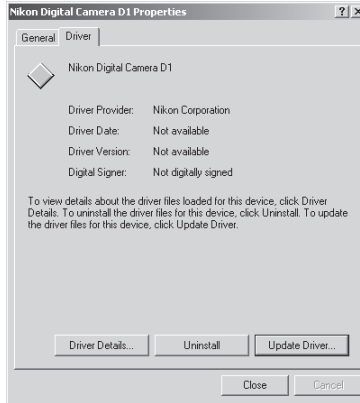
4 The Windows Upgrade Device Driver Wizard will be displayed; click **Next**.

5 The dialog shown below will be displayed. Select the search option and click **Next**.
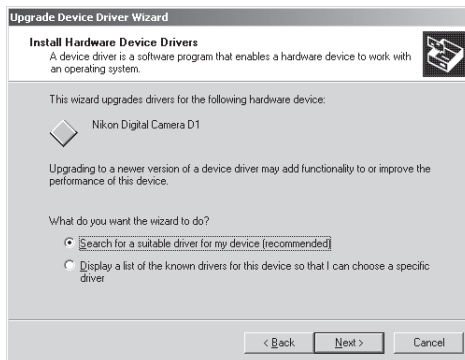
6 The dialog shown below will be displayed. Holding down the shift key to prevent the Welcome dialog from opening automatically, insert the Nikon Capture 2 CD into the CD-ROM drive. Select **CD-ROM drives** and click **Next**.
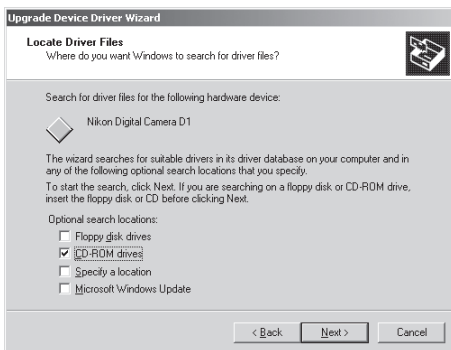
If the Welcome dialog appears when the CD-ROM is inserted, close the dialog by clicking the **Exit** button.

7 The dialog shown below will be displayed. Select **Install one of the other drivers** and click **Next**.
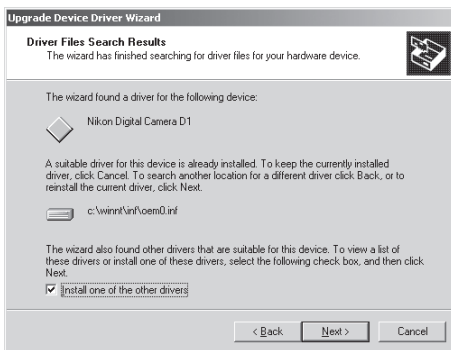
8 Select Nikon Digital Camera D1 series from the dialog below and click **Next**.
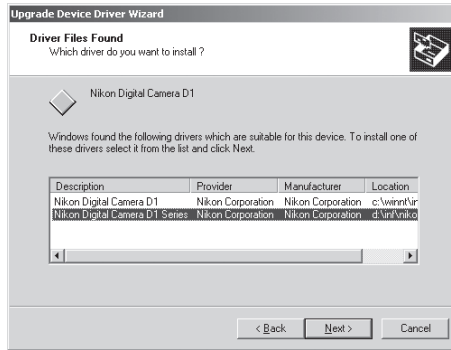
9 The dialog shown below will be displayed; click **Finish**.

10 Confirm that the camera has been registered with the system as described in steps 7–10 of "Registering the Camera under Windows 2000" (pp. 41–42).

Uninstall

This section describes how to uninstall the Windows version of Nikon Capture 2.

1 Start the uninstall program.
From the **Start** menu, select **Programs** > **Nikon Capture 2** > **Nikon Capture 2 Uninstall**.
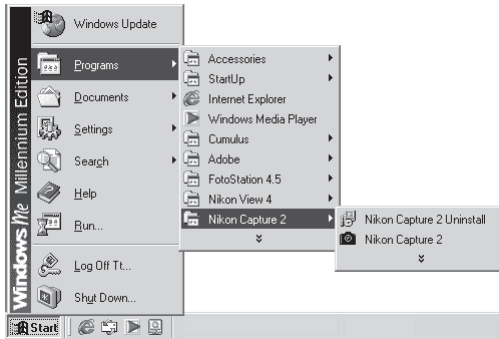
The uninstall program will start.

2 Confirm file deletion.
When the message, "Do you want to completely remove the selected application and all of its components?" appears, click **OK** to begin the process of uninstalling Nikon Capture 2.
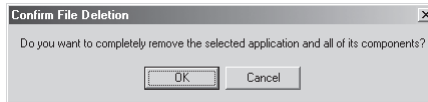
📎 **Logging On**

When uninstalling Nikon Capture 2 from Windows 2000, log in to the Administrator account.

---

3 Decide whether to delete shared and read-only files.
If any of the components used by Nikon Capture 2 are read-only or are also used by another program, a confirmation dialog will be displayed. Follow the instructions in the dialog to remove the component or leave it untouched.

Shared File Detected

The file C:\Program Files\Nikon\NCapture20\Strato2.dll may no longer be needed by any application. You can delete this file, but doing so may prevent other applications from running correctly. Select Yes to delete the file.

☐ Don't display this message again.

| Yes | No | Cancel |
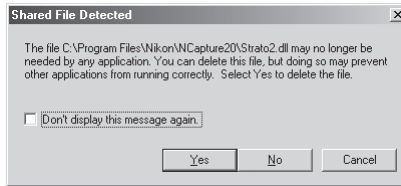
4 Restart your computer.
The dialog shown below will be displayed when the process of uninstalling Nikon Capture 2 is complete. Confirm that **Yes, I want to restart my computer now** is selected and click **Finish** to restart your computer.

Nikon Capture 2 Setup

Nikon Capture 2.0 Setup Complete

Nikon Capture 2.0 Setup has successfully uninstalled Nikon Capture 2.0. You must restart your computer.

⦿ Yes, I want to restart my computer now.

○ No, I will restart my computer later.

Remove any disks from their drives, and then click Finish to complete setup.

| < Back | Finish | Cancel |
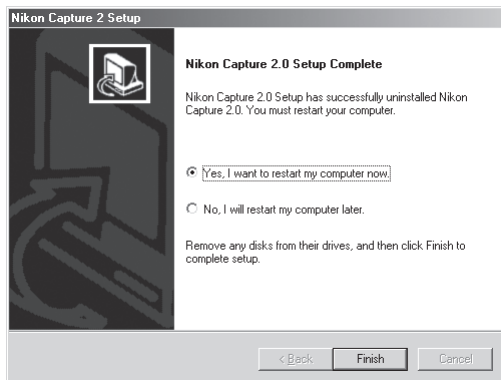
Installing Nikon Capture 2—Macintosh

This section describes the process of installing Nikon Capture 2 on a Macintosh computer. Windows users can refer to "Installing Nikon Capture 2—Windows" (pg. 6).

System Requirements

Before installing Nikon Capture 2, make sure that your system satisfies the following requirements:

CPU	Power Macintosh G3 (Blue & White) or later
OS	Mac OS versions 8.6 to 9.1
RAM	A minimum of 64 MB available to Nikon Capture 2 (128 MB or more recommended)[*]
Hard-disk space	While running, Nikon Capture 2 requires a minimum of 40 MB free hard disk space (200 MB or more recommended)[†]
Video Resolution	VGA (640 × 480 pixels) or better, sixteen-bit color or higher
CD-ROM drive	Required for installation
Interface	Built-in IEEE 1394 interface for connection to camera[†], IEEE 1394 cable

[*] The more images captured, the larger the amount of memory and disk space required. For memory requirements when running Nikon Capture 2 at the same time as other software, see the documentation for the software in question.

[†] Requires FireWire 2.3.3 or later (available from the Apple Computer web-site). The camera may not function as expected when connected to an IEEE 1394 (FireWire) hub.

Installation

This section describes how to install the Macintosh version of Nikon Capture 2. Before starting installation:

- Check the amount of free disk space remaining
- Exit all applications, including any virus-checking software that may be running
- Confirm that the camera is NOT connected to the computer at this time
- Uninstall Nikon View DX (if installed) and any earlier versions of Nikon Capture

You are now ready to begin installation.

1 Turn the computer on.
Turn the computer on and wait for the operating system to start up.

2 Insert the Nikon Capture 2 CD into the CD-ROM drive.
The Nikon Capture window will open automatically on the desktop. If multiple language versions of Nikon Capture are available, open the folder for the language of your choice.

3 Double-click the Nikon Capture 2 Installer icon.
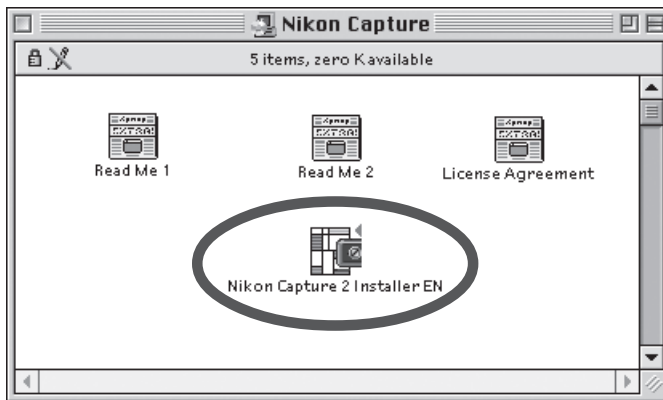
✐ **The ReadMe File**

Be sure to read the ReadMe file, which may contain important information that could not be included in this manual.

4 Click **Continue…**.
Double-clicking the installer icon displays the dialog shown below. Click **Continue…**.

5 Read the license agreement and ReadMe file.
A license agreement will be displayed. If you agree to the terms of the license agreement, click **Accept** to view the ReadMe file. Take a few moments to read this file, which may contain information that could not be included in this manual. After viewing the ReadMe file, click **Continue** to display the installer dialog.

6 After selecting the installation type and destination folder, start the installer.
Use the pop-up menu in the Install Location section to select the volume and folder to which Nikon Capture 2 will be installed. After checking the information in the Install Location area and confirming that **Easy Install** is selected in the pop-up menu at the top left corner of the installer dialog, click **Install** to start the installer.
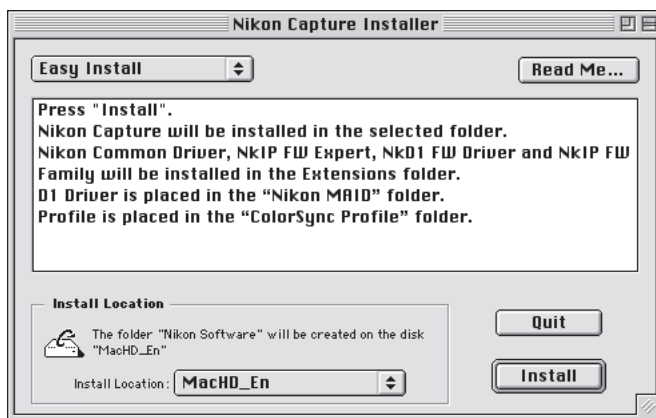
7 Enter user information to personalize your copy of Nikon Capture 2.
The dialog shown below will be displayed. After entering your name, place of work, and the serial number for your copy of Nikon Capture 2, click **OK** to proceed to the next step.

🔍 Serial Number

The serial number may be found on the CD case. The **OK** button in the User Information dialog will only be available when the serial number has been entered correctly.

8 Confirm that the user information is correct.

If the information is correct, click **Yes** to proceed to Step 9.

```
You have provided the following registration
information.

              Name:  Nikon

          Company:  Nikon

  Serial Number:  XXXXXXXX   –   XXXXXXXX

  Is this registration information correct?

                              No        Yes
```
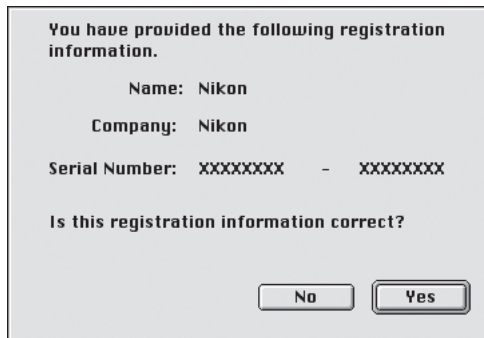
9 Choose the application that will be used to open Nikon Capture 2 files saved in JPEG, TIFF, or PICT format.

Once a captured image has been saved in a format other than NEF, it can not be opened again in Nikon Capture 2. Once you have personalized your copy Nikon Capture 2, a dialog will be displayed where you can select the application that will be used to open images saved from Nikon Capture 2 in other formats. If Adobe Photoshop is installed on your system, you can click **Adobe Photoshop®** to choose Photoshop as the application. To choose a different application, click **Select Application…** and navigate to the folder containing the application you want to use. Another application can be chosen from the Nikon Capture 2 Preferences dialog at any time after installation.

```
In order to prevent confusion, Nikon Capture will not
reopen images after they have been processed and
saved. If you want to view or edit these images, you
must specify another application which can read TIFF
and JPEG files.

This application can always be changed later by using
the Preferences Dialog in Nikon Capture.

    Select Application...          Adobe Photoshop®
```
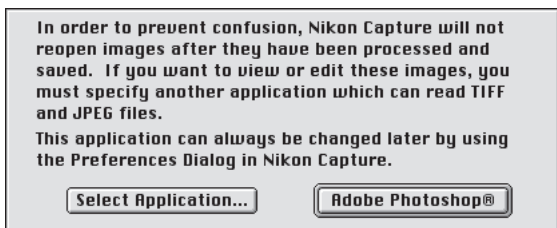
🔍 **Choosing an Application to View JPEG, TIFF, and PICT Files**

If you choose **Select Application…**, you can choose the application used to open files of these types from the File Locations tab of the Preferences dialog (📀 pg. 197) after installation is complete. The selected application will start when:
- you attempt to open a file saved in JPEG, TIFF, or PICT format
- you check **Open in External Application** in the Save As dialog (📀 pg. 91)

🔍 **NEF and YCbCr-TIFF Images**

Files saved in NEF and the camera's YCbCr-TIFF format can only be opened in Nikon View 4 or Nikon Capture 2 (if you have installed the Nikon NEF and Nikon YCC plug-ins provided with Nikon View 4, you can also open NEF and YCbCr-TIFF images in Adobe Photoshop version 5.0 or later, Photoshop LE excluded).

10 Select the initial color-space profile.

Nikon Capture 2 uses color-space profiles to ensure consistent color reproduction. As part of the installation process, you can choose the default color-space profile that will be used when you first start Nikon Capture 2. A new profile can be chosen at any time from the Nikon Capture 2 Preferences dialog.

Once you have selected the application that will be used to open Nikon Capture 2 files saved in JPEG, TIFF, or PICT formats, the dialog shown below will be displayed. To choose a profile that matches the camera color mode, click **D1x or D1H** or **D1**. To choose from a list of profiles supported in Nikon Capture 2, click **Manual Setting**.

```
╔══════════════ Camera Selection ══════════════╗
║                                               ║
║  To set the color space for the output file in Nikon Capture,  ║
║  select a button from those below that corresponds to your     ║
║  camera. When Nikon Capture saves the image, it uses the color ║
║                                               ║
║  When photographs are taken in TIFF or JPEG format, the camera ║
║  processes the image then saves it on the card. The D1 uses NTSC║
║  RGB, whereas the D1X and D1H use sRGB or Adobe RGB as output   ║
║                                               ║
║  If you do not require any special settings, we recommend that ║
║  you use the settings as defined in the camera and Nikon       ║
║  Capture. Select your camera type using the buttons below.     ║
║                                               ║
║  To select the output color space setting manually, click the  ║
║  Details button. If you use both the D1 and D1H/X, then select ║
║  the button for the one you use the most.                      ║
║                                               ║
║  If you decide to change these output color space settings after║
║  installation, you can do so in Preferences.                   ║
║                                               ║
║     ┌──────────┐  ┌──────────────┐  ┌──────────────┐           ║
║     │    D1    │  │  D1X or D1H  │  │Manual Setting│           ║
║     └──────────┘  └──────────────┘  └──────────────┘           ║
╚═══════════════════════════════════════════════╝
```

D1
Clicking **D1** sets the initial color-space profile to NTSC (1953).

D1x or D1H
Clicking **D1x or D1H** displays the dialog shown below, where you can choose the initial color-space profile from "**Setting Adobe RGB**" and "**Setting sRGB**."

```
╔════════════ When using the D1X or D1H ════════════╗
║                                                   ║
║  The D1X and D1H have two color reproduction modes, selecting one will use sRGB, and ║
║  selecting the other will use Adobe RGB mode. The factory default is Mode 1, but by  ║
║  using custom setting 32, you can change the mode.                                   ║
║                                                   ║
║  If you have a newly purchased camera that has not had settings changed, then Mode   ║
║  1 is selected.                                                                      ║
║  Mode 1 (sRGB Optimized)                                                             ║
║  This mode reproduces images (especially flesh tones) with no extra input from the   ║
║  user. This mode is suitable for use on web pages.                                   ║
║  Selecting this mode sets the output color space to sRGB. When principally using Mode ║
║  1, select sRGB. Mode 1 is the factory default.                                       ║
║                                                   ║
║  Mode 2 (Adobe RGB Optimized)                                                        ║
║  This mode reproduces images with an emphasis on color fidelity. Selecting this mode  ║
║  sets the output color space to Adobe RGB. When principally using Mode 2, select     ║
║                                                   ║
║  ┌─────────────────┐  ┌──────────────┐  ┌────────────────────────┐                  ║
║  │Setting Adobe RGB│  │ Setting sRGB │  │Return to the previous step│                ║
║  └─────────────────┘  └──────────────┘  └────────────────────────┘                  ║
╚═══════════════════════════════════════════════════╝
```

🔍 Before Choosing a Color Space Profile

Before choosing a color-space profile, make sure that your monitor has been properly set up.

Manual Setting

Clicking **Manual Setting** displays the dialog shown below. Click **Continue**.

🖼 Choosing a Color Space Profile

When choosing a color-space profile, you should bear two things in mind: the *gamma value* for your platform and the *gamut* (range) of colors required for the task at hand.

Gamma is a fundamental characteristic of imaging systems, used to adjust the brightness of scanned images so that they display correctly on your monitor. The first six profiles in the profile list have a gamma value of 2.2, which is the de facto standard for Windows. The last two have a gamma value of 1.8, the default value for the Macintosh. Select a profile appropriate to the platform on which the image is to be displayed.

The other factor to bear in mind when selecting a profile is the *gamut*, or range of colors you will need for the task at hand. If you are not planning to make fine adjustments to color, a profile with a narrow range of colors is suitable. Note, however, that a narrow gamut may produce colors that are too "saturated," or vivid. If you intend to fine-tune color, contrast, and brightness using an editing tool such as the Curves window, choose a profile that offers a wide range of colors. Without editing, however, such a profile may produce "flat," low-contrast images.

Profiles within each of the two groupings are ordered by the size of their gamut. Those with a narrow gamut are listed at the top, those with a wide gamut at the bottom.

A list of color-space profiles will be displayed.

Choose a profile for use as the initial color-space profile. The effects of the color range and gamma setting for each profile can be seen in the image to the right of the profile list. Select a profile and click **OK**, or click **Using the Wizard** to choose a color-space profile with the help of a wizard.

Clicking **Using the Wizard** displays the dialog shown below:

Click **Windows** to display a Windows wizard, **Macintosh** to display a wizard for Macintosh computers. Choose a color-space profile by following the on-screen instructions.

11 Restart the computer.

When installation is complete, the dialog shown below will be displayed. Click **Restart** to restart your computer.

> Installation was successful. You have installed software which suggests you restart your computer. If you are finished, click Restart, or click Quit to leave the Installer. If you wish to perform additional installations, click Continue.
>
> [Continue] [Quit] [Restart]

Uninstall

This section describes how to uninstall the Macintosh version of Nikon Capture 2.

1 Start the installer.
Insert the Nikon Capture 2 CD into the CD-ROM drive and start the installer as described in steps 3–5 of "Installation" (pp. 54-55).

2 Select **Uninstall**.
Select **Uninstall** from the pop-up menu at the top left corner of the Nikon Capture Installer dialog, then click the **Uninstall** button at the dialog's bottom right corner.
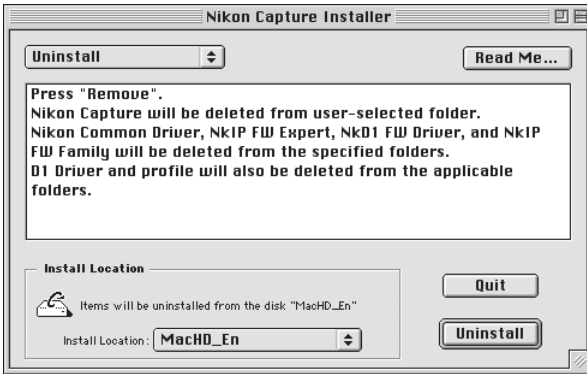
3 Exit the installer.
Once Nikon Capture 2 has been uninstalled, the dialog shown below will be displayed. Click **OK** to exit the installer.
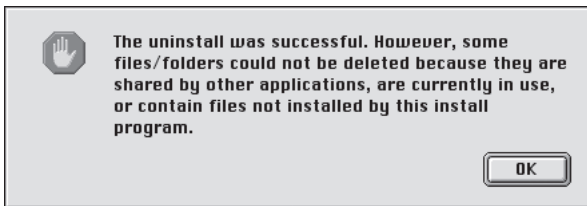
Tutorial

This chapter explains the basic operation of Nikon Capture 2. Read this chapter when running Nikon Capture for the first time after installation.

Getting Started

Windows

1 Turn on the computer and start Windows.

2 From the **Start** menu, select **Programs** > **Nikon Capture 2** > **Nikon Capture 2**.

The Nikon Capture 2 window will open on the desktop.

Nikon Capture 2 window

Menu bar
Toolbar

Disk-space indicator

Status bar (displays interactive help messages)
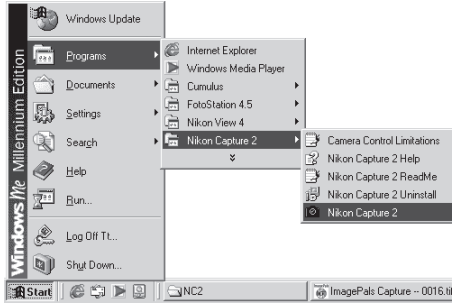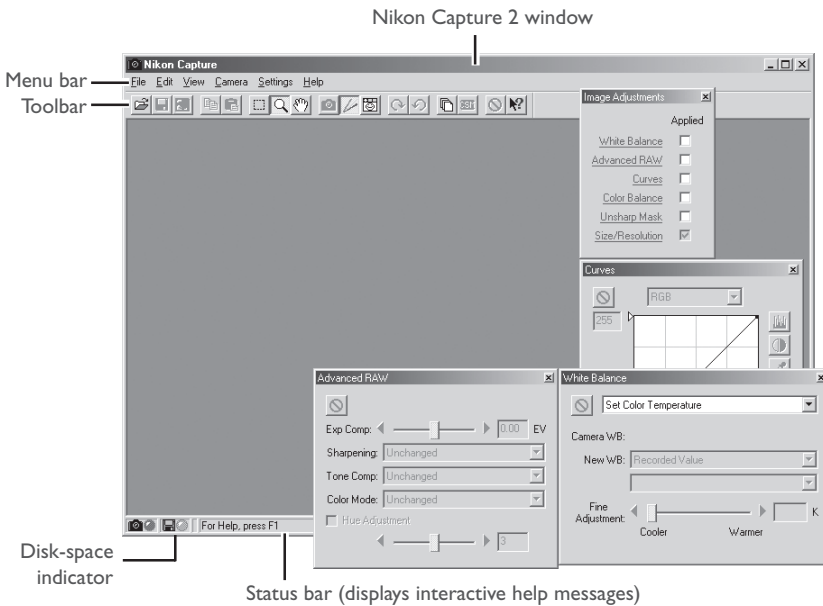
Windows Displayed at Start-up

Any windows that were open when last you quit Nikon Capture 2 will be displayed the next time you start the program.

Macintosh

1 Turn on the computer and wait for the operating system to start up.

2 Open the Nikon Capture 2 folder in the folder to which you installed Nikon Capture 2 and double-click the **Nikon Capture** icon.
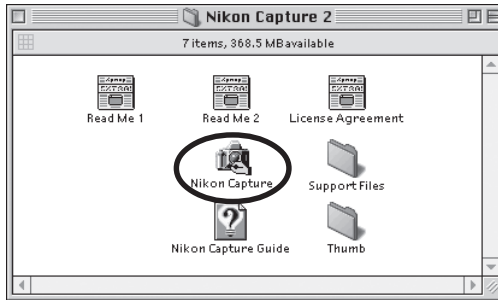
The Nikon Capture 2 window will open on the desktop.
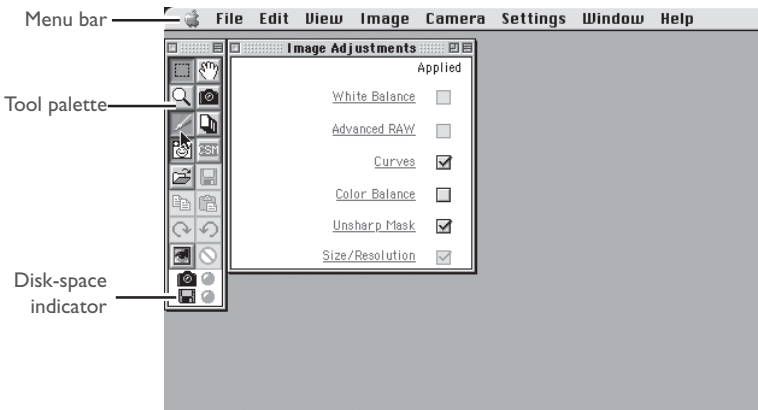
For a detailed description of the options available in the menu bar, toolbar (Windows), and tool palette (Macintosh), see "Reference" (📖 pg. 203).

🔍 The Disk-Space Indicator

The color of the disk space indicator shows how much unused hard-disk space is available.

Green: More than 200 MBs available on both the volume used for temporary storage and on the volume used to store thumbnails

Yellow: Less than 200 MBs remaining on one or both volumes.

Red: Less than 100 MBs remaining on one or both volumes. Choose a different volume from the File Locations tab of the Preferences dialog (📖 pg. 197) or free space by deleting unnecessary files.

Opening Image Files

This section describes how to open image files that have been captured and saved to the computer's hard disk. For information on capturing images, see "Capturing Photographs" (📖 pg. 139) and "Transferring Existing Photographs to a Computer" (📖 pg. 239).

Nikon Capture 2 can be used to open images saved in Nikon Electronic Image Format (NEF) and unedited JPEG and TIFF files created with D1, D1x, and D1H digital cameras (note that NEF files created with Nikon Scan 3 can not be opened in Nikon Capture 2).

1 Click the 📂 button or select **Open…** from the **File** menu.
A dialog like that shown below will be displayed.

Open	? ✕
Look in: 🔽 My Documents ▼ ← 🔼 📄 📊▼
📁 My Music
🖼 My Pictures
📁 My Videos
File name: [   ] [Open]
Files of type: [Nikon Electronic Image Format (*.nef) ▼] [Cancel]
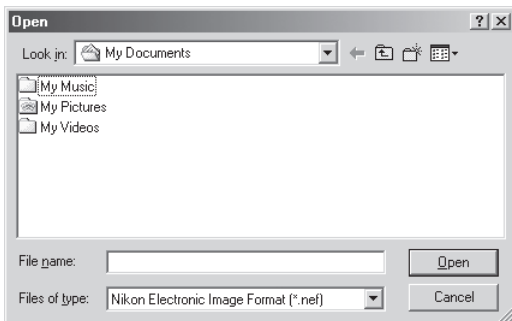
2 Navigate to the desired drive (volume) and folder.

3 Double-click the target file.
The selected image will be opened in an image window within Nikon Capture 2.

🔍 Opening Images in an External Application

When you attempt to open a file that has been edited and saved in TIFF or JPEG, a message will be displayed indicating that the file can not be opened in Nikon Capture 2. If the **Open saved image in external application** option in the File Locations tab of the Preferences dialog (📖 pg. 197) is checked, you will be asked whether you would like to open the file in an external application. Select **Yes** to start the application and open the file.

🔍 NEF and YCbCr TIFF Formats

• Photographs taken at an image quality setting of HI-RAW are stored in NEF format, which records twelve-bit image data from the camera's CCD. Photographs taken at an image quality setting of YCbCr-TIFF are saved in an uncompressed TIFF format that models color using measures of luminance (Y) and chrominance (Cb and Cr). Images of these types can only be viewed using Nikon View 4 or Nikon Capture 2.

• NEF and YCbCr files can be opened in Adobe Photoshop version 5.0 or later (Photoshop LE excluded) using the Nikon NEF and Nikon YCC filters supplied with Nikon View 4 (note that NEF files created with Nikon Scan 3 can not be opened using the Nikon NEF plug-in).

Working with Image Windows

Images are displayed in independent image windows or in the Camera Image window (🔛 pg. 145). Image enhancement and save operations are performed on the image in the active window.

Image Windows

Images are opened in independent image windows when a copy is made of the image selected in the Camera Image window or when an image is opened with the **Open…** option in the **File** menu. Any number of image windows may be open simultaneously.

Title bar ——
Shooting ——
   Data
   section

Preview ——
   section

Title Bar

The title bar provides the following information about the image:

File name:	If the image was opened using the **Open…** command in the **File** menu, the title bar shows the file name and path.
Zoom ratio:	The current zoom ratio as a percentage of the original size. The original size for display purposes is determined by the number of pixels in the image and the resolution of the monitor and does not reflect the physical dimensions of the image when printed.

"Image not saved" indicator:
                Images that have not been saved to disk are indicated by an asterisk ("*").

Viewing Photo Information

Photo information for the image displayed in the Preview section of the Image window can be viewed in the Shooting Data section.

1 Display the Shooting Data section.
Click the arrow at the top left corner of the Shooting Data section.

The Shooting Data section shows the date and time of recording and the shooting data in effect at the time the photograph was taken.

2 Close the Shooting Data section.
To close the Shooting Data section, click the triangle at its top left corner.

Right-Button Menu (Windows)

Clicking on the Preview section with the right mouse button displays a menu of options identical to the **Image** menu.

Shooting Data Section

The Shooting Data section shows the following photo information for the selected image:

Camera type	Date and time of recording	Image type
File format	Image quality	Image size
Lens focal length and aperture	Focal length	Exposure mode
Metering mode	Shutter speed and aperture	Exposure compensation
Flexible program	Exposure indicator	Flash sync mode
Sensitivity (ISO equivalency)	Color mode	Hue adjustment
Camera ID	White balance	Tone compensation
Image sharpening	Longitude	Latitude

The shooting data section can be hidden or displayed by clicking the triangle at the top left corner, or by selecting **Shooting Data Section** from the **View** menu.

The Preview Section

Any changes to image adjustment settings are reflected in the image in the Preview section of the active window.

Zoom

By altering the zoom ratio, you can enlarge all or part of an image to fill the screen. The zoom ratio is displayed in the window title bar.

Using the Zoom Tool

Zooming in on an Image

1 Click the 🔍 tool or select **Zoom Cursor** from the **View** menu.
The cursor will change to ⊕.

2 Click anywhere in the image for an enlarged view of the selected area.
The spot you click will be at the center of the new, enlarged view.

🔍 The Zoom Cursor and Zoom Tool (Windows Only)

In the Windows version of Nikon Capture 2, you can zoom in on an area of the image by dragging the mouse over the area when the zoom cursor is selected. To restore zoom to 100%, double-click the zoom tool in the toolbar.

✎ Zoom

Zoom operations have no effect on the physical size of the image.

Zooming out from an Image

1 Click the 🔍 tool or select **Zoom Cursor** from the **View** menu.
The cursor will change to ⊕. Hold down the **Ctrl** (Windows) or **option** (Macintosh) key on the keyboard to change the shape of the cursor to ⊖ (the zoom-out cursor).

2 Click anywhere in the image to zoom out from the selected area.
The spot you click will be at the center of the new view.

Using the Zoom Commands

Zooming in on an Image
Select **Zoom In** from the **View** menu. The view will be enlarged by a fixed amount.

Zooming out from an Image
Select **Zoom Out** from the **View** menu. The zoom ratio will be reduced by a fixed amount.

🔍 **Cursor Short Cuts**

While the shift (Windows) or command (Macintosh) key is pressed, the mouse pointer will change to a zoom-in cursor (⊕). To change to a zoom-out cursor (⊖), press the Ctrl (Windows) or option (Macintosh) key. Press the Alt (Windows) or shift (Macintosh) key to change to a grab cursor (✋).

🔍 **The Bird's Eye Window**

The Bird's Eye window shows the position of the portion of the image visible in the active image window. This can be useful if only a portion of the image will fit in the window at the current zoom ratio, when the Bird's Eye window can be used to navigate to another area of the image without zooming the image out. To view the Bird's Eye window, select **Bird's Eye** from the **View** menu. For more information, see "The Bird's Eye Window" (👁 pg. 73).

Scrolling Images

At high zoom ratios, only part of the image may fit in the image window. In this case, the grab cursor can be used to view other areas of the image.

Using the Grab Cursor

Click the ⬚ button in the toolbar (Windows) or tool palette (Macintosh). When the mouse pointer is moved over the image, it changes to a ✋ cursor. Drag the image in the image window until the desired area is visible.

The Bird's Eye Window

The Bird's Eye window shows the position of the portion of the image visible in the active image window. To display or hide the Bird's Eye window, select **Bird's Eye** from the **View** menu.

The portion of the image visible in the active image window is indicated by a red outline.

Red outline is displayed
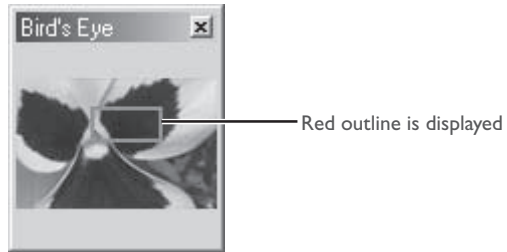
When the mouse pointer is moved over the red outline, it changes to a 🖐 cursor. Drag the red outline over the area of the image you would like to view. The selected area will be displayed in the active image window.

Changing the Size of the Bird's Eye Window

The size of the Bird's Eye window can be adjusted by dragging its borders (Windows) or by dragging the handle at its lower right corner (Macintosh).

Rotating and Flipping Images

The image in the active image window can be rotated or flipped as described below.

Rotating Images

Click the ↻ tool or select **90 degrees CW** from the **Rotate** submenu to rotate the image in the active window ninety degrees to the right. Click the ↺ tool or select **90 degrees CCW** from the **Rotate** submenu to rotate the image in the active window ninety degrees to the left.

Image rotated ninety degrees clockwise

Image before rotation
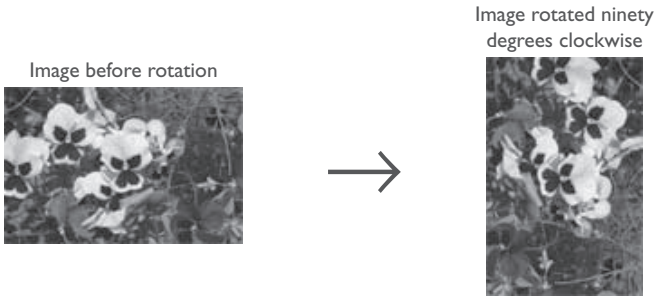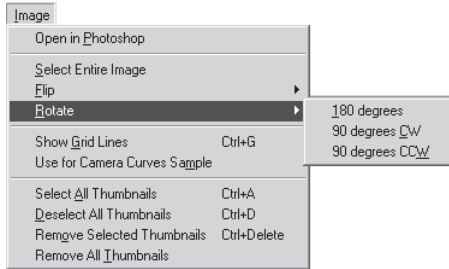
Flipping Images

Use the commands in the **Flip** submenu to flip the image in the active window horizontally or vertically.
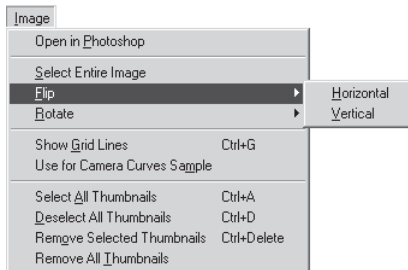
The Information Window

The information window shows the position and color of the pixel under the mouse pointer.

To display or hide the Information window, select **Information** from the **View** menu.

x-y coordinates ——

Information

x: 1044
y: 532

R: 49
G: 47
B: 23
Avg: 44

Red
Green
Blue
Average
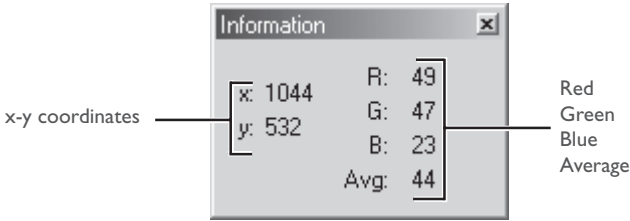
x-y coordinates:

The position of the cursor in the image window, measured in pixels from the top left corner of the image.

R, G, B, Avg: The values for each of the red, green, and blue elements of the pixel under the cursor and the average of the three, weighted according to the properties of human color perception (the weighted average is calculated as (Red × 0.299) + (Green × 0.587) + (Blue × 0.114)). Depending on the selected color space, the average may not reflect the actual luminance of the pixel under the cursor, but it can be used as a rough guide to brightness. Values for R, G, B, and the average of the three range from 0 to 255, with values for twelve-bit images being scaled to fit in this range. The number on the left is the input value, or value for the color in the original image. The value in the right is the output value, or value after any changes in the Curves or Color Balance windows have been applied.

Selecting a Crop

Using the crop tool, you can select a portion of the image to be saved to disk in a separate file. If no selection is made, the entire image will be saved. The crop tool can be used in image windows and in the Preview section of the Image window.

1 Click the ▢ tool or select **Selection Cursor** from the **View** menu.
The mouse pointer will change to crop cursor (+) when moved over the image in the Preview section of the active window.

2 Drag the mouse to select a crop.
Your selection will be marked by a dotted line.
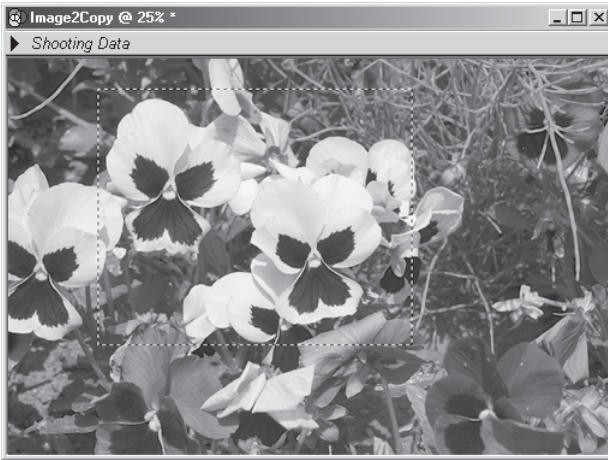
🔲 **Saving the Crop to a Separate File**

Unless the image is saved in NEF, only the selected portion of the image will be saved. When images are saved in NEF, the entire image will be saved together with information on the position and dimensions of the current crop.

Cancelling the Current Crop

To cancel the current crop and select the entire image, click outside the current crop or choose **Select Entire Image** from the **Image** menu. Note that you may not be able to select the entire image when **Keep my output size** is selected in the Size/Resolution window.

Moving the Crop

To move the crop over a different part of the image, move the pointer over the crop. The pointer will change to a ⬚ (Windows) or ⟷ cursor (Macintosh). Drag the crop to move it to a new position.

Changing the Size of the Crop

To change the size of the current crop, move the pointer over the borders of the crop. The pointer will change to a double arrow. Drag the borders of the crop to adjust its size.

Output Size and Resolution

The Size/Resolution window is where you specify the final ("output") size of the image in the active window. The output size specifies the physical dimensions of the current crop when displayed on a monitor or printed at the specified resolution. The resolution should be set to match the resolution of the printer (for example, 300 or 600 ppi) or monitor (usually 72 or 96 ppi).

1 Select **Size/Resolution** from the **View** menu.
The Size/Resolution window will be displayed.

Size/Resolution	✕
⦿ Keep my crop	
○ Keep my output size	
Width: 3.98	inches ▼
Height: 2.15	
at 300	ppi ▼
Scale: 100.0% 8-bit RGB: 2.20MB	
CMYK: 2.94MB 16-bit RGB: 4.41MB	
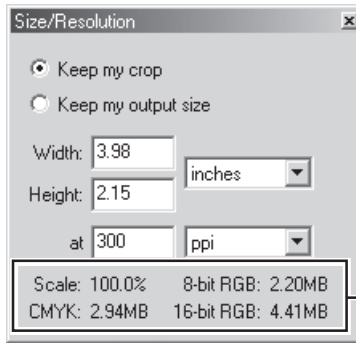
Changes to size and resolution reflected instantaneously

2 Enter a value for width or height and adjust the output resolution to match the output device.
Changes to size and resolution will be reflected instantaneously in the figures for scale (output size as a percentage of original) and file size.

🔍 **Specifying Output Size in Pixels**

If **pixels** is selected as the unit for output size, you will not be able to change the resolution.

Image Adjustment

Nikon Capture 2 offers basic image adjustment tools, including tone compensation and unsharp mask. The higher the quality of a captured image when saved to disk, the less significant the loss of quality when the image is retouched in another application such as Photoshop. One of the most notable features of Nikon Capture 2 is its support of NEF, which allows the original image data to be saved exactly as originally captured. Information on any changes made in Nikon Capture 2 saved is separately in the same file.

RAW Images

RAW images can be edited to remove color casts or change the exposure compensation value or tone curve selected when the photograph was taken. These tasks are performed using the tools in the White Balance and Advanced RAW windows. White balance can be adjusted by specifying a color temperature or by editing red and blue gain for the entire image. The Advanced RAW window is used to change the options selected for image sharpening, tone compensation, and other settings when the picture was taken.

Tone, Color Balance, and Contrast

Adjustments to brightness, contrast, and color balance are made in the Curves or Color Balance window. Using the tools in the Curves window, you can adjust the tone curves that map between input and output levels for precise control of tonal information for the image as a whole and for each color channel. These tools are best suited to experienced users or to complicated color editing tasks. The Color Balance window can not be used to edit tone curves directly, but instead offers easy-to-use tools for adjusting brightness, contrast, and color balance over the entire image.

Unsharp Mask

If an image lacks overall definition and sharpness, you can use the tools in the Unsharp Mask window to sharpen outlines.

Using Unsharp Mask

When checking the results of unsharp mask in the monitor, set the zoom ratio in the active window to 100%.

Curves and Color Balance

Changes to Curves and Color Balance can not be applied simultaneously to a single image. Choose the tool suited to your level of experience and the task at hand.

Basic Image Adjustment Operations

This section describes operations common to the White Balance, Advanced RAW, Curves, Color Balance, and Unsharp Mask windows.

Viewing the Image Adjustment Windows

To hide or view all image adjustment windows currently on display, press the tab key.

Settings for Newly Captured Images

The settings that apply when an image is captured are determined by the option selected in the Settings for Next Camera Image panel in the General tab of the Preferences dialog. You can choose to use the values in the default image settings file or the settings that applied to the previous image.

Applying Changes

Settings in the White Balance, Advanced RAW, Curves, Color Balance, and Unsharp Mask windows can only be adjusted, and changes to settings applied, if the Apply button for the window is checked. If the Apply button is off, the effects of changes to settings will not be visible and no adjustments to settings can be made. Before making changes to settings, click the Apply button once to turn it on. Note that Curves and Color Balance can not be applied simultaneously to a single image.

Click to turn Apply button on or off

Apply button off   Apply button on
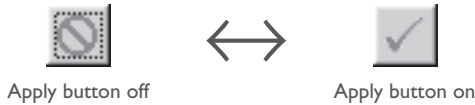
Hiding Changes

Changes to the image in the active window can be hidden by clicking and holding the Show Original Image Data tool button (⊘) in the toolbar (Windows) or tool palette (Macintosh). The original image will be displayed only while the button is held down, allowing quick "before-and-after" comparisons that help you to determine whether adjustments to the image are having the desired effect.

Windows toolbar

Show Original Image Data tool button

Macintosh tool palette

Show Original Image Data tool button
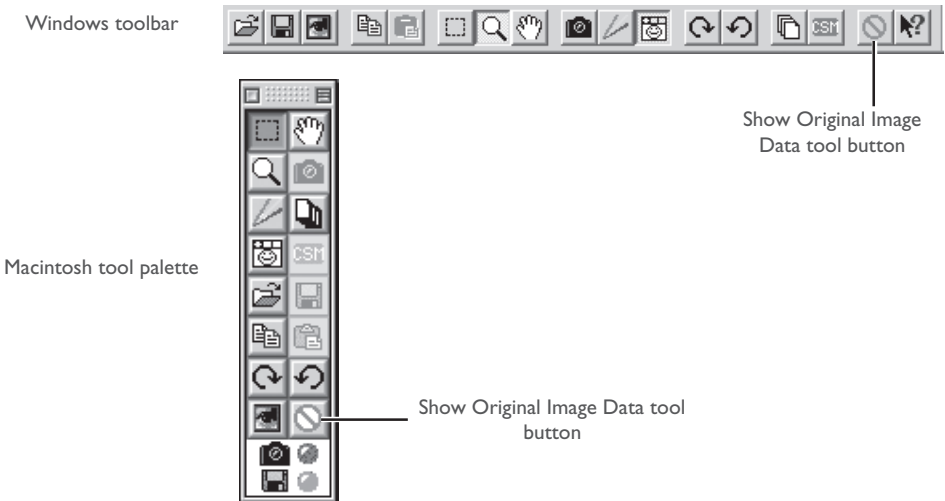
The White Balance Window

To display the White Balance window, select **White Balance** from the **View** menu. White balance for RAW images can be adjusted by specifying a color temperature or by sampling the image for a "gray point" (i.e., the color that will appear as neutral gray in the final image). To choose a specific color temperature, select **Set Color Temperature** from the pop-up menu at the top of the White Balance window.
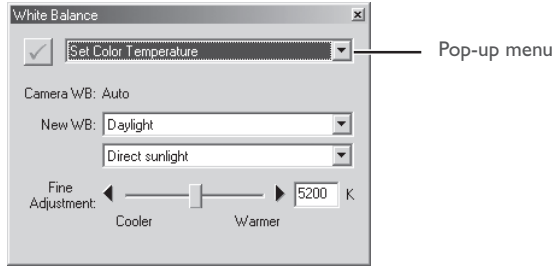
Pop-up menu

To sample the image for the gray point, select **Set Gray Point** from the pop-up menu.

Pop-up menu
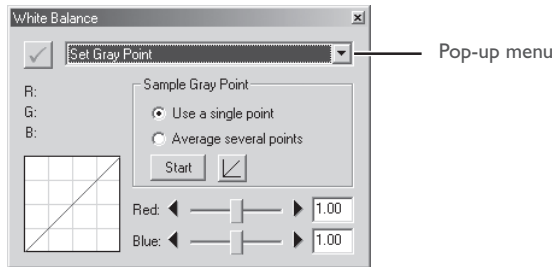
📎 **White Balance**

White balance can be performed on RAW images only. The Apply button in the White Balance window is not available if the image in the active window is JPEG or TIFF.

The Advanced RAW Window

To display the Advanced RAW window, select **Advanced RAW** from the **View** menu.
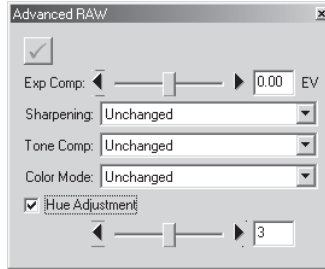
The tools in the Advanced RAW window can be used to change the exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment from the values in effect at the time the photograph was taken. Select new settings from the pop-up menus or using the sliders. If the Apply button is off, the values in effect at the time the photograph is taken will be used.

✐ Advanced RAW

The options in the Advanced RAW window apply to RAW images only. The Apply button in the Advanced RAW window is not available if the image in the active window is JPEG or TIFF.

The Curves Window

To display the Curves window, select **Curves** from the **View** menu.

Apply button

Current channel

View edited histogram

Auto contrast

White point

Midpoint

Black point

Resetting the Active Curve to Linear

Resetting All Curves to Linear
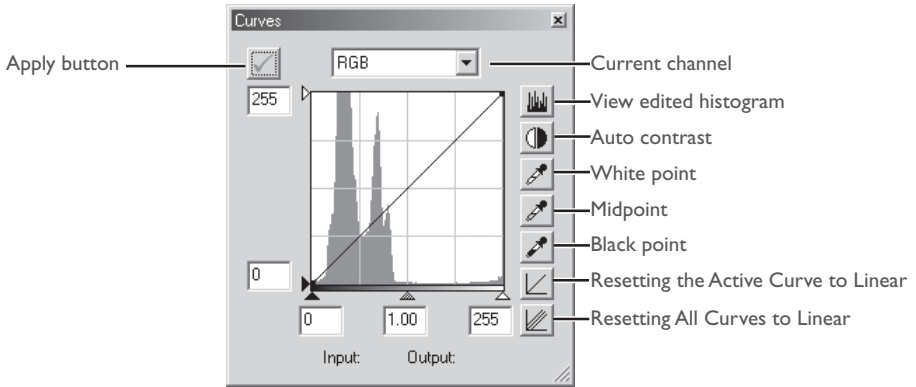
Tone curves for the RGB master channel and each of the red, green, and blue channels can be selected from the pop-up menu at the top of the Curves window. The sliders at the bottom and left side of the curve edit display are used to adjust the black point, midpoint, and white point to suit the distribution of tones in the image. Adjustments can be made to specific portions of the tone range by editing the curves directly. The histogram behind the curve edit display can be used to compare the distribution of tones in the original image with the tone distribution after editing.

✎ **Curves and Color Balance**

When the Apply button in the Curves window is on, the Apply button in the Color Balance window will turn off automatically. Changes to Curves and Color Balance can not be applied simultaneously to a single image.

The Color Balance Window

To display the Color Balance window, select **Color Balance** from the **View** menu.

Apply button

Brightness

Contrast

Red

Green

Blue
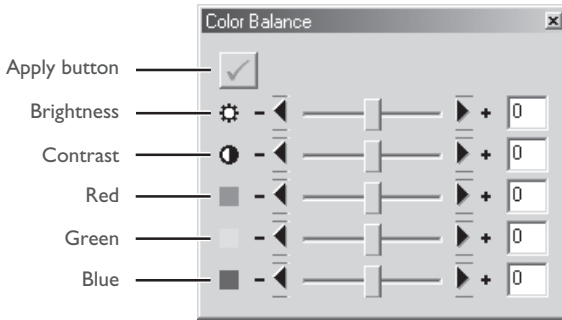
Adjustments can be made to brightness, contrast, and color balance using the sliders or by entering values directly in the text boxes to their right.

✎ Curves and Color Balance

When the Apply button in the Color Balance window is on, the Apply button in the Curves window will turn off automatically. Changes to Curves and Color Balance can not be applied simultaneously to a single image.

The Unsharp Mask Window

To display the Unsharp Mask window, select **Unsharp Mask** from the **View** menu.

Apply button ——
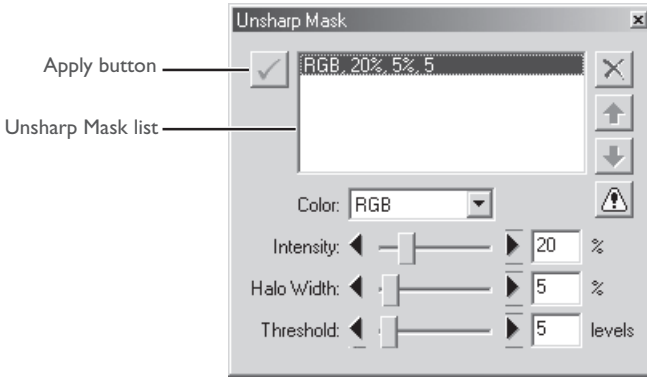
Unsharp Mask list ——

Unsharp masks can be applied selectively to different color channels.

Saving Images

Nikon Capture 2 supports a variety of file formats. Images displayed in Nikon Capture 2 can be saved in a file format that suits the end in view. Hints for choosing a file format may be found on the pages that follow.

File Format and Image Quality

The relationship between the camera image quality setting and the file format used by the camera is shown in the following table:

Image Quality Setting	Camera File Format	Compression	Image Quality
RAW (uncompressed)*	NEF (Nikon Electronic Image Format)	Uncompressed	High
RAW (compressed)*		Compressed	
RGB-TIFF YCbCr-TIFF	TIFF	Uncompressed	
FINE	JPEG (DCF†)	Low	
NORMAL		Medium	
BASIC		High	Low

* Whether compression is available in at an image-quality setting of RAW depends on the make of camera. Compression is only available with the D1x and D1h; the D1 does not support compression.

† DCF (**D**esign Rule for **C**amera **F**ile Systems): an industry-wide standard for digital camera file systems.

Note that saving JPEG-compressed images in an uncompressed format such as TIFF will not result in improved image quality (🦉 pg. 88).

Options for Saving Image Files

Nikon Capture 2 offers two options for saving files: **Save** and **Save as…**. The **Save** command can be used when saving images opened in Nikon Capture 2 using the **Open…** command. If this command is selected when the image in the active window has yet to be saved to the computer's hard disk, the Save As dialog will automatically be displayed. The **Save as…** command can also be used to save an existing file under another name or in a different format or location.

Nikon Capture 2 supports the following file types when saving images:

File Type	Compression	Extension
NEF (Nikon Electronic Image Format)	Uncompressed	.NEF
16-bit TIFF (RGB) 8-bit TIFF (RGB)	Uncompressed	.TIF
TIFF (CMYK)	Uncompressed	.TIF
JPEG (Exif-compliant)	Compressed	.JPG
JPEG (JFIF-compliant)	Compressed	.JPG
BMP (Windows only)	Uncompressed	.BMP
PICT (Macintosh only)	Choice of compressed or uncompressed	.PIC

Choosing a File Type

Nikon Electronic Image Format (NEF)
All images, including those taken at an image quality setting of RAW, can be saved in Nikon Electronic Image Format (NEF). NEF images can only be opened in Nikon View 4 or Nikon Capture 2, or in Adobe Photoshop 5.0 or later (Photoshop LE excluded) using the Nikon NEF filter supplied with Nikon View 4.

Images saved in NEF format maintain the high quality of the original photograph; adjustments to White Balance, Advanced Raw, Curves, Color Balance, Unsharp Mask and Size/Resolution settings are not applied to the original image data, but are instead saved separately in the same file. NEF images can later be opened in Nikon Capture 2 and saved again in a format that can be opened in other applications. As changes to settings are only applied to the original image data when the image is saved in another format, this minimizes any loss of image quality that may be produced when the image is edited. Save images in NEF whenever you are unsure of how they will be used or when you want to process the original image in a number of different ways.

JPEG, TIFF, BMP, and PICT

Images saved in these formats can not be opened in Nikon Capture 2.

TIFF

Use TIFF when saving images for high-quality output or publishing. Although the lack of compression will result in larger files, image quality will be maintained at a high level. TIFF also preserves the ICC profile and caption information. This format is supported by a wide variety of applications on a variety of platforms.

JPEG

This file type is adequate for images that will be output at low resolution or distributed in electronic form. Compression allows more images to be saved in the same amount of disk space while preserving the ICC profile and caption information. Note, however, that JPEG compression results in loss of image information that can not afterwards be restored. Save files at the lowest compression ratio possible; if necessary, you can always save them again at a lower compression ratio. EXIF is an extension of the JPEG format that allows thumbnail data and information about the image to be included in a JPEG file.

BMP

BMP, the generic image format used on Windows computers, is available only in the Windows version of Nikon Capture 2. Most Windows users will be able to view files of this type. Note that the ICC profile and caption information are not saved when images are converted to BMP.

PICT

PICT, the generic image format used on Macintosh computers, is available only in the Macintosh version of Nikon Capture 2. Most Macintosh users will be able to view files of this type. Unlike BMP, PICT supports compression and allows inclusion of the ICC profile and caption information.

Using the "Save" and "Save as…" Commands

Images can be saved using **Save** or **Save as…**. The **Save** option saves the image in the same location as the original without changing the file name or format. The **Save as…** option lets you choose a location, file name, and format. If you attempt to save an image in the Camera Image window (🐢 pg. 145) using the **Save** command, the Save As dialog will automatically be displayed.

1 Click the ⊟ tool or select **Save** from the **File** menu.
The Save dialog for your platform will be displayed.
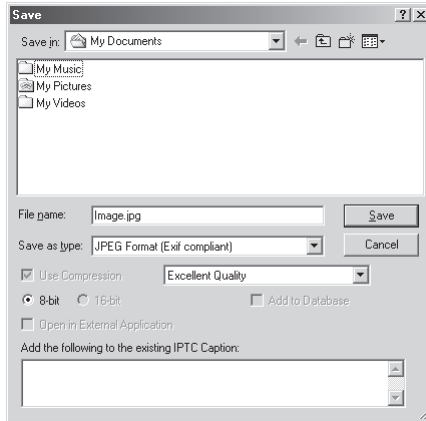
2 Navigate to the desired folder.

3 Choose a file type (file format) from the pop-up menu.
See "Choosing a File Type" (🐢 pg. 87) for more information.

4 Choose whether to compress the image (PICT only).
If the selected file type is PICT (available only in the Macintosh version of Nikon Capture 2), you can choose to compress the image by selecting the **Use Compression** option.

5 Choose a compression ratio.
If you have chosen a file type that supports compression (JPEG or PICT), you can select a compression ratio from "Highest Compression Ratio," "Good Compression Ratio," "Good Balance," "Good Quality," and "Excellent Quality."

6 Enter a file name.
The default file name appears in the **File name** text box. A new file name can be entered if desired.

7 Click **Save**.
Click **Save** to save the file under the specified name.

Save Options

In addition to the settings listed on previous pages, the following options are available in the Save As dialog:

Bit depth

Add to Database

Open in External Application

Add the following to the existing IPTC Caption
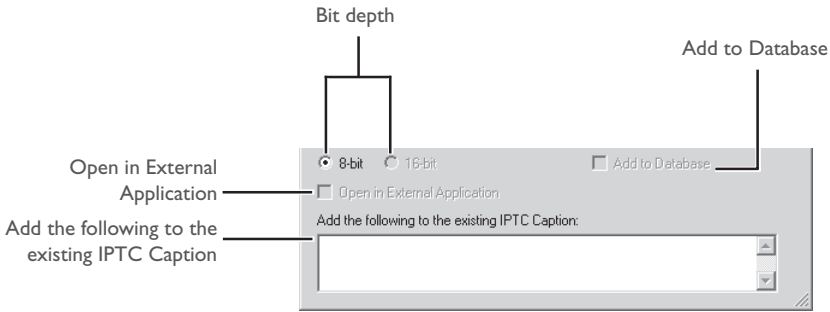
Bit depth: Gives the bit depth (the number of bits of color information per channel for each pixel in the image) at which the image will be saved. The 16-bit option is only available if the selected file type is **TIFF format (RGB)** and the original image has a bit depth of over eight bits.

Open in External Application:

If **Open saved Image in external application** is selected in the File Locations tab of the Preferences dialog, the name of the selected application (e.g., Adobe Photoshop 5.0) will be displayed. This option can not be selected if the chosen file format is NEF. If this check box is on, the image will automatically be opened in the selected application after being saved to disk.

Add to Database:

If this option is checked, the image will be catalogued in Canto Cumulus 5 as it is saved. This option is only available if: Canto Cumulus 5 is installed, **Add saved images to Canto Cumulus 5** has been selected in the File Locations tab of the Preferences dialog, and a Canto Cumulus 5 catalog file has been selected. If any of the above conditions are not met, this option will not be available.

Add the following to the existing IPTC Caption:

Text to be included with the file. This information can be displayed in the Adobe Photoshop file information caption. The information in this text box will be added at the end of any existing information.

Quitting Nikon Capture 2

Windows

Select **Exit** from the **File** menu.
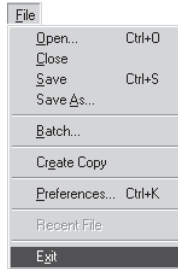
Macintosh

Select **Quit** from the **File** menu.

📷 Other Options for Quitting Nikon Capture 2 (Windows)

To exit the Windows version of Nikon Capture 2, you can also:
• Click the close button at the top right corner of the Nikon Capture 2 window
• Click the icon at the top left corner of the Nikon Capture 2 window with the right mouse button and select **Close** from the menu that appears.
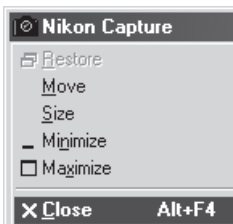
Image Adjustment

This chapter describes how to use Nikon Capture 2 to perform image adjustment operations on photographs taken with your Nikon digital camera.

Before they will be ready for display or output on a monitor or printer, images captured from the camera will usually need to be adjusted to a size and resolution appropriate to the task at hand. Other settings, such as white balance, contrast, and sharpness, may also require adjustment. The settings that can be adjusted depend on the image quality setting in effect when the photograph was recorded. Photographs taken at an image-quality setting of RAW can be processed to adjust white balance or to alter exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment from the settings in effect at the time the photograph was taken. All images can be processed to adjust, tone curves, color balance, sharpness, and size and resolution.

Image Quality	Process	Window	👹
RAW	Adjust white balance.	White Balance	98
	Choose new settings for exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment.	Advanced RAW	104
RAW RGB-TIFF YCbCr-TIFF FINE NORMAL BASIC	Adjust tone, color balance, and contrast. There are two distinct tools for this task: the Curves window, which provides precise control over tone, and the Color Balance window, which features simpler controls.	Curves	108
		Color Balance	119
	If the image lacks definition, you can sharpen outlines using the controls in the Unsharp Mask window. Unsharp mask only be applied at the last step, after all other adjustments have been made.	Unsharp Mask	123
	Adjust the size and resolution of the image for output on a particular device.	Size/Resolution	127

When the edited image is saved to disk using the **Save as…** command, you can choose the color model (RGB or CMYK) and the bit depth (RGB images only) for the final image. If the image is saved in NEF format, the original image data will be saved exactly as recorded by the camera, with changes to image adjustment settings stored separately in the same file.

Image Adjustment Control Panel

Using the Image Adjustment Control Panel, you can readily display any of the image adjustment control windows and turn the adjustments in each window on and off. The Image Adjustment Control Panel can also be used to save settings for multiple image adjustment windows in a single file and recall these settings as desired. These settings can be used for batch processing, as described in the following chapter (👉 pg. 131).

Viewing the Image Adjustment Control Panel

To display the Image Adjustment Control Panel, click the 🖉 button or select **Image Adjustment Control Panel** from the **View** menu.
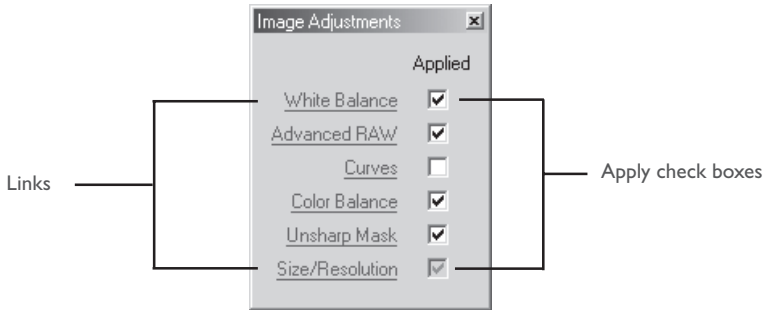
Links: Click the links in the Image Adjustment Control Panel to display the selected image adjustment window.

Apply check boxes:

Click the Apply check boxes to turn adjustments for the selected window on or off. The settings in the selected image adjustment window will be applied to the image in the active window when the box to the right of the window name link is checked. Note that because Size/Resolution settings always apply, they can not be turned off in the Image Adjustment Control Panel.

🔍 White Balance / Advanced Raw

The Apply check boxes for White Balance and Advanced Raw are only active if the image in the active window was captured at an image-quality setting of RAW.

Saving and Loading Settings from the Image Adjustment Control Panel

Settings for the items currently checked in the Image Adjustment Control Panel can be saved in a single file and recalled as desired. These settings can also be used for batch processing, as described in the following chapter (📕 pg. 131). To save or recall settings, select **Image Adjustments** from the **Settings** menu to display a sub-menu containing the following options:

Settings		
Camera Control	▶	
Image Adjustments	▶	Load...
		Save...
White Balance	▶	
Advanced RAW	▶	
Curves	▶	
Color Balance	▶	
Unsharp Mask	▶	
Size / Resolution	▶	
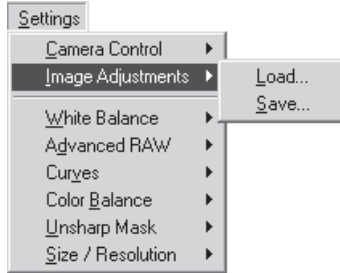
🔍 **Apply Button Status**

The information saved in the joint settings file includes the status of Apply button for each image adjustment window. When the file is loaded, the settings in each window will be turned on or off to reflect the status of the Apply button when the settings were saved.

🔍 **Right-Button Menu (Windows)**

In the Windows version of Nikon Capture 2, the **Image Adjustment Control Panel** menu can be displayed by right-clicking in the Image Adjustment Control Panel.

Load…:   Select this item to load settings previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".set" will be displayed). The settings in the Image Adjustment Control Panel window will instantly revert to the saved settings.

Save…:   Select this item to save settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current settings (in the Windows version of Nikon Capture 2, size and resolution settings are saved with the extension ".set"). If this file can later be selected for batch processing, images will be processed according to the settings in the file (pg. 135).

White Balance

The tools in the White Balance window are used to adjust white balance for RAW images. Using these tools, not only can you correct white balance when the setting chosen with the camera failed to produce the desired effect, you can also deliberately alter white balance to introduce a cold or warm cast into the image. White balance can be adjusted by specifying the desired color temperature or by sampling the image for the gray point.

Specifying a Color Temperature

1 Select **White Balance** from the **View** menu.
The White Balance window will be displayed. Select **Set Color Temperature** from the pop-up menu at the top of the window.
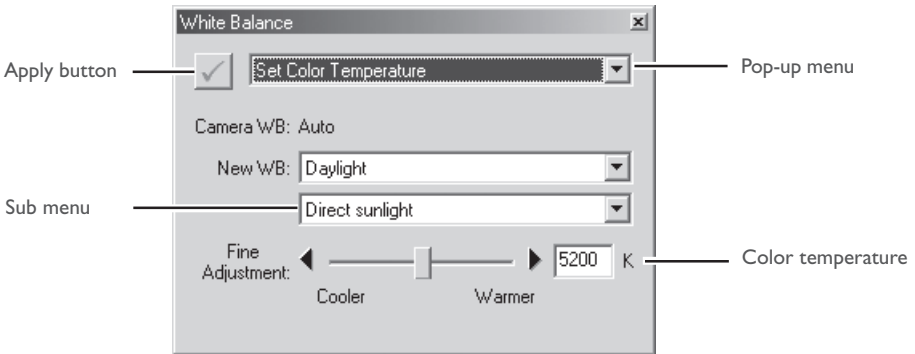
2 If the Apply button is off, turn it on.

📀 Displaying the Color Temperature

When the **Show degrees Kelvin for White Balance** option is checked in the Advanced Color tab of the Preferences dialog, the color temperature is displayed in the White Balance and Fixed White Balance windows.

🖉 White Balance

White balance can be performed on RAW images only. If the image in the active window is JPEG or TIFF, the Apply button in the White Balance window will be grayed out and inactive.

3 Adjust white balance using the options in the White Balance window.

Camera WB: Shows the white balance setting in effect at the time the photograph was taken and the amount of fine-tuning performed.

New WB: The white balance setting to be applied to the captured image can be chosen from the options listed in the table below. When **Daylight**, **Standard Fluorescent**, or **High Color Rendering Fluorescent** is selected, white balance can be fine-tuned by selecting an option from the sub-menu.

New WB	Sub-menu	Color Temperature	Notes
Use Gray Point	—	—	The value for white balance chosen in the grey-point selection dialog is used (🔆 pg. 100).
Recorded Value	—	—	The value chosen for white balance when the photograph was taken is used.
Incandescent	—	3,000 K	Use with incandescent light.
Daylight	**Direct sunlight**	5,200 K	Use with direct sunlight.
	Cloudy	6,000 K	Use under overcast skies.
	Shade	8,000 K	Use in the shade on sunny days.
Standard Fluorescent, High Color Rendering Fluorescent	**Warm White**	3,000 K	Suited to fluorescent lighting, including lighting with a noticeable color cast. The type of bulb can be chosen from a sub-menu of five options.
	3700K	3,700 K	
	Cool White (4100K)	4,100 K	
	5000K	5,000 K	
	Daylight (6500K)	6,500 K	
Flash	—	5,400 K	Use with Nikon Speedlights.

Fine Adjustment: White balance can be fine-tuned using this slider. This option is not available when **Use Gray Point** or **Recorded Value** is selected for **New WB**. White balance can be adjusted by ±50 mired (a unit of color temperature equivalent to 10^6 divided by the temperature in degrees Kelvin; for example, 5000 K is equivalent to 200 mired). Note that color temperature can not be raised above 9066 K, and that a setting of **Flash** can be fine-tuned in the range of 4277 K–7479 K.

🔍 The Apply Button

Changes to white balance only take effect when the Apply button at the top left corner of the White Balance window is checked. When this button is checked, any changes to white balance will be visible immediately in the image in the active window. The Apply button can be turned on and off for a quick "before-and-after" comparison, allowing you to determine whether changes are having the desired effect.

Sampling the Image for Gray Point

1 Select **Set Gray Point** from the pop-up menu at the top of the White Balance window.

2 If the Apply button is off, turn it on.

Apply button — | Set Gray Point | — Pop-up menu

— Reset button

— Sliders
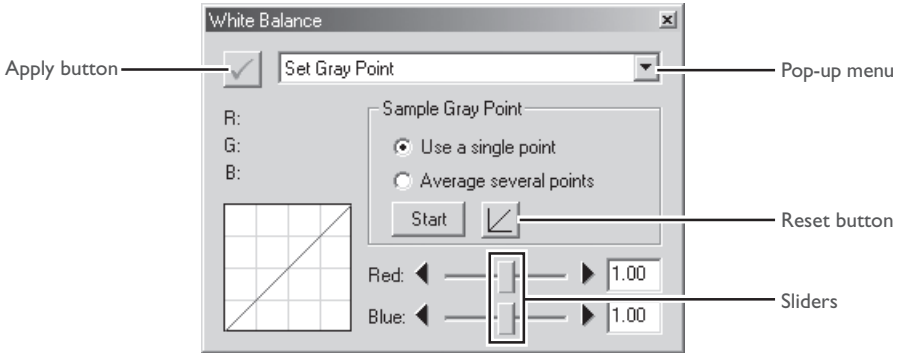
3 Sample the image to choose a reference point for white balance.
You can define white balance using a single point or the average of several points. During sampling, the values for red (R), green (G), and blue (B) for the pixel under the cursor will be shown in the White Balance window. Refer to these values when selecting the point or points to be sampled.

Using a Single Point to Define White Balance
After selecting **Use a single point**, click **Start**. The cursor will take the shape of an eyedropper (✐) when moved over the image in the active window. Click a point that you would like to appear a neutral gray color in the final image. The new value for white balance will be reflected in the image in the active window.

Using the Average of Several Points to Define White Balance
After selecting **Average several points**, click **Start**. The cursor will take the shape of an eye-dropper (✐) when moved over the image in the active window. You can then sample points that should be a neutral gray color in the final image. If you select more than one point, the average will be used to determine white balance. After sampling all the desired points, click **Stop**. The new value for white balance will be reflected in the image in the active window.

🔍 Sample Size

The size of the area sampled with the eyedropper cursor can be set using the **Dropper sample size** option in the Advanced Color tab of the Preferences dialog.

Gain for the red and blue channels will be adjusted based on the points sampled, changing the slope of the red and blue tone curves and the position of the red and blue sliders.
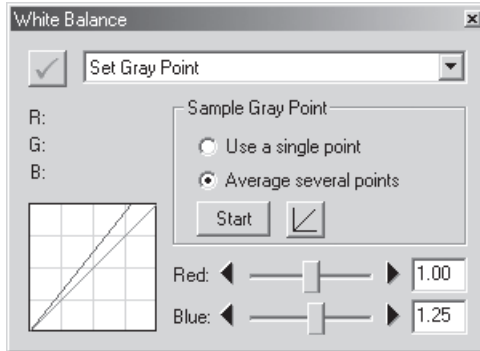
White balance can also be adjusted by moving the red and blue sliders or by entering a value from 0.1 to 10 in the text boxes to their right.

Reset button: Click this button to reset the red and blue curves to the default value for gain (1.0).

Red slider/Blue slider:

Adjust gain by moving these sliders or entering a value from 0.1 to 10 in the text boxes to their right.

📝   **Choosing a Value for Gain**

Very large and small values for gain can result in a drop in image quality. We recommend values between 0.25 and 4.0.

🔍   **Gain**

The values for red and blue gain chosen in the White Balance window are multiples of the value set for gain when the photograph was taken.

The White Balance Settings Menu

Selecting **White Balance** from the **Settings** menu displays a sub-menu of options that can be used to save and recall white balance settings or to restore the value for white balance in effect at the time the photograph was taken.
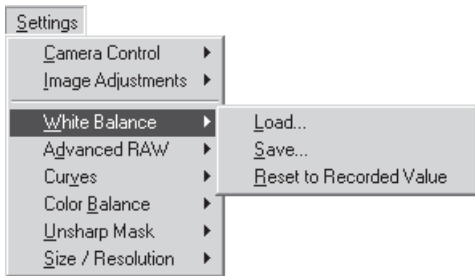
Right-Button Menu (Windows)

In the Windows version of Nikon Capture 2, the **White Balance** menu can be displayed by right-clicking in the White Balance window.

102

Load…: Select this item to restore white balance to settings saved using the **Save…** option. A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".nwb" will be displayed). The settings in the White Balance window will instantly revert to the saved settings.

Save…: Select this item to save current white balance settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current white balance settings (in the Windows version of Nikon Capture 2, white balance settings are saved with the extension ".nwb").

Reset to Recorded Value:
Selecting this item restores the value for white balance in effect at the time the photograph was taken.

🔍 **Apply Button Status**

The status of the Apply button is not recorded when white balance settings are saved. If you save white balance settings with the Apply button in the White Balance window on and later load these settings with the Apply button off, the saved settings will be loaded but the status of the Apply button will not change. The saved settings will not apply to the image in the active window until you open the White Balance window and turn the Apply button on.

Advanced RAW

The options in the Advanced Raw window are used to alter exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment from the settings in effect at the time the photograph was taken.

1 Select **Advanced RAW** from the **View** menu.
The Advanced Raw window will be displayed.
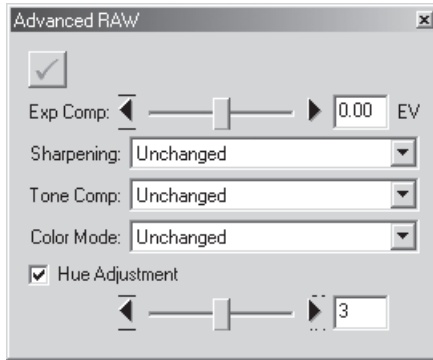
2 If the Apply button is off, turn it on.

✎ **Advanced RAW**

Advanced RAW can be performed on RAW images only. If the image in the active window is JPEG or TIFF, the Apply button in the Advanced Raw window will be grayed out and inactive.

---

3 Choose the desired **Advanced RAW** settings.

Exp Comp: Choose a value from –2 to +2 EV using the slider or enter a value in the text box to its right.

Sharpening: Choose from **Unchanged**, **None**, **Low**, **Normal**, or **High**. In the case of photographs taken with the D1, **Normal** is equivalent to **None**.

Tone Comp: Choose from **Unchanged**, **Normal**, **Less Contrast**, **More Contrast**, or **User-Defined Custom Curve**. Because the D1 does not store custom curves in the image file, settings of **User-Defined Custom Curve** and **Unchanged** are equivalent to **Normal** when selected with photographs taken with the D1. With the D1x and D1н, selecting **Unchanged** restores the tone curve in effect at the time the photograph was taken.

Color Mode: Choose from **Unchanged**, **D1 Mode (NTSC)**, **Mode I (sRGB)**, or **Mode II (Adobe RGB)**. In the case of images taken with the D1, **Unchanged** is equivalent to **D1 Mode (NTSC)**.

Hue Adjustment:

     This setting simulates the camera's hue adjustment setting by modifying hue while leaving brightness and chroma unaffected. Changes to this setting have no effect when Custom Setting 3 is selected. To use the value for hue adjustment in effect at the time the photograph was taken, turn the **Hue Adjustment** check box off.

🔍 **Hue Adjustment**

The hue adjustment option in Nikon Capture 2 allows hue to be adjusted without affecting luminosity or chroma.

🔍 **The Apply Button**

Changes to Advanced Raw only take effect when the Apply button at the top left corner of the Advanced Raw window is checked. When this button is checked, any changes to Advanced Raw will be visible immediately in the image in the active window. The Apply button can be turned on and off for a quick "before-and-after" comparison, allowing you to determine whether changes are having the desired effect.

The Advanced Raw Settings Menu

Selecting **Advanced Raw** from the **Settings** menu displays a sub-menu of options that can be used to save and recall Advanced Raw settings or to restore the values in effect at the time the photograph was taken.
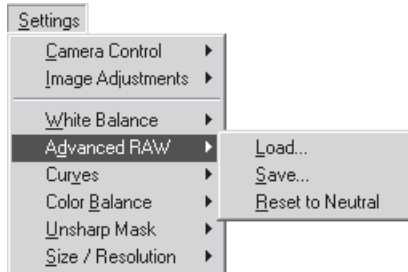
Load…:	Select this item to restore Advanced Raw settings to settings saved using the **Save…** option. A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".nar" will be displayed). The settings in the Advanced Raw window will instantly revert to the saved settings.
Save…:	Select this item to save current Advanced Raw settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current white balance settings (in the Windows version of Nikon Capture 2, Advanced Raw settings are saved with the extension ".nar").
Reset to Neutral:	Selecting this item restores the settings in effect at the time the photograph was taken. In the case of the D1, image sharpening will be set to **None**.

Apply Button Status

The status of the Apply button is not recorded when Advanced Raw settings are saved. If you save Advanced Raw settings with the Apply button in the Advanced Raw window on and later load these settings with the Apply button off, the saved settings will not apply to the image in the active window until you turn the Apply button on.

Right-Button Menu (Windows)

In the Windows version of Nikon Capture 2, the **Advanced Raw** menu can be displayed by right-clicking in the Advanced Raw window.

Curves

Although your Nikon digital camera will reproduce colors accurately if settings have been adjusted appropriately, it will usually be necessary to adjust contrast, tone (brightness) levels, and color balance to make maximum use of the tone range and color gamut offered by a particular output device, such as a printer or monitor. Nikon Capture offers two tools for performing these tasks: the Color Balance window (see "Color Balance" later in this chapter) and the Curves window. Of the two, the Curves window offers the more precise control. The Color Balance window is useful when, for example, you want to adjust brightness or color balance for all pixels in the image. The Curves window, in contrast, allows adjustments to be made to specific portions of the tone range, making it possible to enhance the image while preserving detail.

🖉 Curves and Color Balance

Color balance and curves can not be used together. If the controls in the Curves window are active, the controls in the Color Balance window are disabled. If the Color Balance controls are active, the controls in the Curves window are disabled. Only one of color balance or curves can be applied when a modified image is saved.

🔍 The Apply Button

Changes to curves only take effect when the Apply button at the top left corner of the Curves window is checked. When this button is checked, any changes to curves will be visible immediately in the image in the active window. The Apply button can be turned on and off for a quick "before-and-after" comparison, allowing you to determine whether changes are having the desired effect.

🔍 Resizing the Curves Window

The Curves window can be resized by dragging its borders (Windows) or by dragging the handle at the lower right corner of the window (Macintosh). The curves edit display changes with the size of the window, allowing you to enlarge the display to a maximum of 256×256 pixels. At this size, each of the 256 points on the tone curve is represented by a separate pixel, granting maximum precision when editing curves.

Curves—an Overview

To open the Curves window, choose **Curves** from the **View** menu.

Apply button —————

Current channel
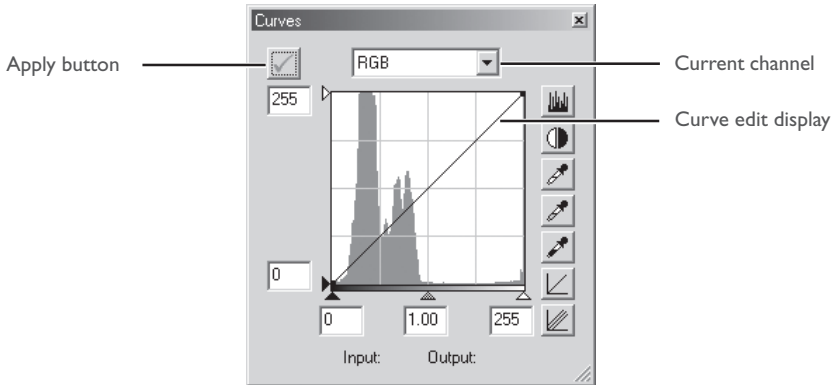
Curve edit display

The main editing tool in the Curves window is the curve edit display, which contains a curve showing the relationship between input (the tones in the original image) and output (how the tones in the input will be represented in the final image). Separate curves control the relationship between input and output for the image as a whole (the "master curve") and for each of the red, green, and blue color components, or "channels." The default curve in each case is linear, meaning that tones will be output exactly as they are input.

The Curve Edit Display

Although values for input and output in the Curves window range from zero to 255 (eight-bit precision, familiar to users of other image editing software), the results of any changes to curves are calculated at a precision of sixteen bits. This allows twelve-bit RAW data to be modified without lowering the quality of the output.

Input is plotted along the horizontal axis, with shadows (the dark areas of the image) to the left, highlights (the bright areas of the image) to the right, and mid-tones in between. The left end of the axis marks the minimum possible value for colors in the selected channel (zero, or no color), the right end the maximum value. In the case of the master curve, the minimum value represents areas of the input image that are a true black; the maximum value represents areas that are a true white. Output is plotted along the vertical axis, with the minimum possible output value (again, zero, or no color) at the bottom and the maximum output value at the top.
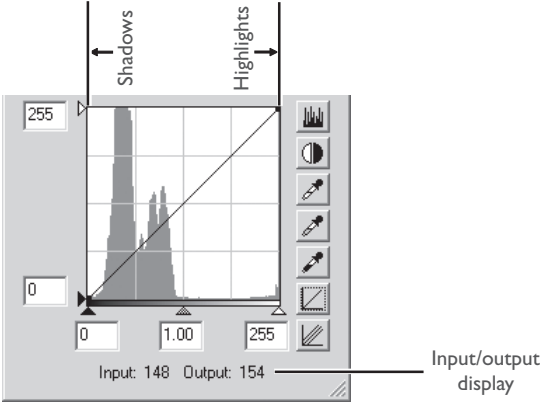
When the cursor is moved over the curve edit display, the input and output values for the point under the cursor are shown in the input/output display. The input value represents the level of the pixel in the original image, the output value the level of the pixel after any changes to the curve have been applied.

Viewing the Histogram

The first step in adjusting tone levels and color balance in the Curves window is to view the histogram displayed in the background of the curve edit display. The histogram tells you what tones are present in the original image and in what amounts, information that you will use when setting the black point and white point and editing curves. The histogram takes the form of a bar graph. The horizontal axis gives the tone level, with shadows to the left and highlights to the right. The vertical axis gives the number of pixels of each tone level found in the image, scaled to fit in the curve edit display.

Histogram button
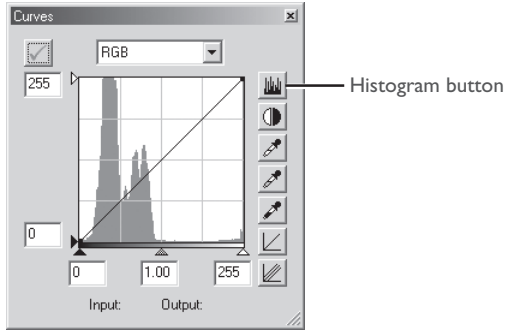
By assigning the darkest tones in the image an output value of zero and the brightest tones in the image an output value of 255, blacks will be output as blacks and whites as whites, making the most effective use of the dynamic range of the output device.

To view the distribution of tones in the final, output image after changes to curves, click and hold the histogram button ( ).

Channel Selection

You can modify tones for all colors in the image using the master curve, or select any of the red, green, and blue curves for editing using the channel menu. The histogram shows tone levels for the selected channel only. When the master curve is selected, the auto-contrast button and white-point and black-point eyedropper tools apply simultaneously to all of the red, green, and blue curves (the master curve is unaffected). When one of the red, green, and blue curves is selected, these controls can be used to edit the selected curve only.
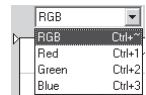
🔍 Channel Selection Shortcuts

The current channel can also be selected using the following shortcuts:
- Ctrl ˜ (Windows)/⌘ ˜ (Macintosh)
  Master channel (RGB)
- Ctrl 2 (Windows)/⌘ 2 (Macintosh)
  Green channel (RGB)
- Ctrl 1 (Windows)/⌘ 1 (Macintosh)
  Red channel (RGB)
- Ctrl 3 (Windows)/⌘ 3 (Macintosh)
  Blue channel (RGB)

Setting the White Point and Black Point

The endpoints of the curve are referred to as the "white point" and the "black point." The black point for a given channel represents the darkest shade (minimum value) for that color; the white point, the brightest shade (maximum value). By default, the input and output values for the black point are zero. The darkest shade in the input image may however be greater than zero, with the result that a portion of the curve is dedicated to reproducing tones not actually present in the image. Increasing the input value for the black point until it matches the darkest shade in the image will steepen the curve, enhancing overall contrast without causing a corresponding loss of detail in shadows. Similarly, if the original image does not actually contain shades corresponding to the maximum value, the white point can be lowered to match the brightest shade in the image.

There are two steps to selecting a white point and black point for the final image: choosing the white-point and black-point input levels, and selecting output levels.

White-Point and Black-Point Input Levels
Input levels for the white point and black point can be set using any of the following three methods:
• automatic contrast adjustment
• white-point and black-point sliders
• direct sampling using the white-point and black-point eyedropper tools

Automatic Contrast Adjustment
In automatic contrast adjustment, Nikon Capture 2 automatically selects white and black points that exclude a certain percentage of the brightest and darkest pixels in the image, steepening curves for enhanced contrast (the exact percentage of pixels excluded can be specified in the Preferences dialog; see "Preferences," below). By default, 0.5% of the brightest and darkest pixels are excluded, producing a curve that makes optimal use of the output tone range while preserving details in shadows and highlights.

To perform an auto contrast operation, click the auto contrast button (◑). The white and black points for each of the red, green, and blue channels will be modified simultaneously and the master curve will be displayed in the Curves window (the master curve itself is unaffected by this operation). Clicking the button with the Ctrl (Windows) or option (Macintosh) key held down adjusts contrast only for the channel currently selected in the channel menu.

White-Point and Black-Point Sliders

The white-point and black-point sliders can be used to match the white and black points to the histogram displayed in the curve edit display. While these sliders can be used to edit curves for any channel, the best results are usually obtained when they are used to modify the master curve.

To edit the white point or black point, click the corresponding slider once to activate it, then drag it to the right or left (a value can also be entered directly in the text box underneath the slider). Matching the black-point slider with the lowest input value displayed in the histogram will set the minimum output value for the selected channel to the darkest pixel actually present in the image, steepening the curve and enhancing contrast without sacrificing detail in shadows. Similarly, matching the white-point slider with the highest input value displayed in the histogram will set the maximum output value for the selected channel to the brightest pixel present in the image, enhancing contrast without loss of detail in highlights. Any changes are applied instantly to the active image.
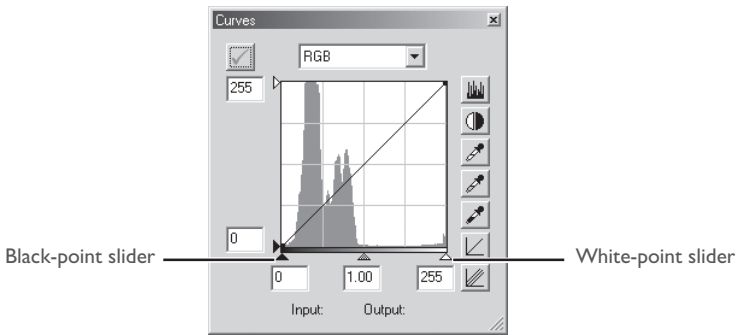
Sampling the Image for White Point or Black Point

The white point or black point can be set by directly sampling the image, allowing you to choose the pixels that will be used to set the maximum (white point) or minimum (black point) output value. This makes it possible to set the black point by matching it to a pixel in the darkest part of the image containing detail you want to preserve, eliminating details in darker areas that are not important to the final image. Similarly, you can match the white point to a pixel in the brightest area of the image containing details important to the final image. While direct sampling can be used with any channel, it is most effective when used with the master curve. When the master curve is selected, sampling will set the white or black point for red, green, and blue curves simultaneously; the master curve itself is unaffected.

To sample the white point, click the white-point button (⬜). When the cursor is moved over the active image, it will take the shape of an eyedropper. Move the cursor over the image to find the pixel that you want to use to set the white point, keeping an eye on pixel level display in the Information window to identify pixels with high input values. With the cursor over the target pixel, click the mouse button. The input value for the selected pixel will be used as the input value for the white point. The cursor will return to its original shape, and the image will automatically be altered to reflect the new value for white point.

To sample the image for the black point, click the black-point button (⬜) and move the eyedropper cursor over the image until you find the point that you want to use to set the minimum input value, then click the mouse button to select the black point.

⬜ **Setting the White Point or Black Point for the Current Channel**

By default, sampling sets the white point or black point for all channels and displays the master channel. To set the white point, midpoint, or black point for the current channel only, sample the image while holding down the Ctrl key (Windows) or option key (Macintosh) on the keyboard. Note that midpoint can not be sampled for a single channel; regardless of the channel currently selected in the channel menu, sampling the image for midpoint always sets the midpoint for all channels and displays the master channel.

White Point and Black Point Output Levels

Once you have set the input level for the black point and white point, output levels can be altered to reflect the actual shade of the darkest and brightest pixels in the image. If the darkest shade in the image represents a true black, for example, the output level for the black point can be left at zero. If, however, darkest shade present in the image is a lighter color, the output level for the black point can be raised to achieve more natural coloration.

The output levels for the white point and black point are set using the white-point and black-point output sliders on the left side of the curve edit display.

White-point output slider ────────

Black-point output slider ────────
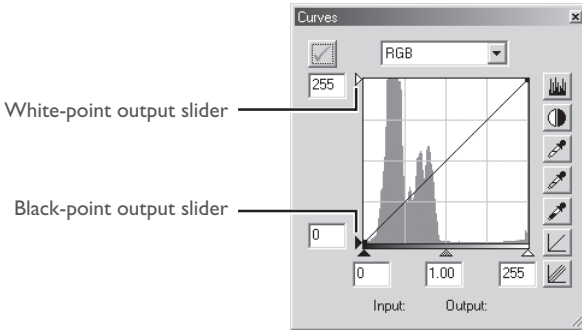
To set the output level, click the slider once to activate it, then drag it up or down until you have found the desired output level (the output level can also be set by entering a value directly in the text box to the left of the slider). The effects of the change will be reflected in the active image.

Setting the Midpoint

The point midway between the maximum and minimum input values is known as the "midpoint," which represents a neutral shade corresponding to an output level of 128. The midpoint is controlled by a midpoint slider at the bottom of the curve edit display. Moving the midpoint slider to the left increases the brightness of mid-tones without "washing out" highlights. Moving the slider to the right darkens mid-tones without obliterating detail in shadows.

The midpoint can be set using the midpoint slider or by directly sampling the image using the midpoint eyedropper tool.

The Midpoint Slider
The midpoint slider is located at the bottom of the curve edit display.
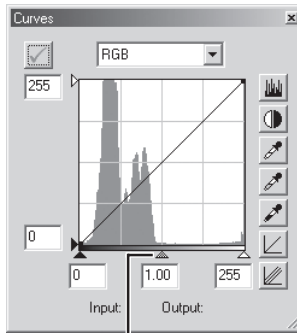
Midpoint slider

After clicking the slider once to activate it, move it to the left to increase the brightness of mid-tones in the selected channel, or move it to the right to decrease brightness. Alternatively, you can enter a value for gamma directly in the text box under the slider. The effects of changes to the midpoint can be seen in the active image.

Gamma

Gamma (also written "γ") is a fundamental property of video systems which determines the intensity of the output signal relative to the input. When calculating gamma, the maximum possible input intensity is assigned a value of one, and the minimum possible intensity (no input) is assigned a value of zero. Output is calculated by raising input to a power that is the inverse of the gamma value (output = input $^{(1/\gamma)}$). In practical terms, raising the gamma value has the same effect as moving the midpoint slider to the left, raising mid-tone output values and brightening the image while leaving the maximum and minimum values untouched. Lowering the gamma value has the same effect as moving the midpoint slider to the right, lowering mid-tone output values and darkening the image. The default value for gamma is one, which produces a linear curve in which input and output values are the same. Gamma can be set to any value between 0.05 and 6.00.

Sampling the Image for Midpoint

The midpoint can also be set by direct sampling. Regardless of the channel currently selected in the channel menu, sampling simultaneously defines the midpoint for each of the red, green, and blue channels while leaving the midpoint for the master curve unchanged.

To sample the midpoint, click the midpoint button ( ). When the cursor is moved over the active image, it will take the shape of an eyedropper. Move the cursor over the image to find the pixel that you want to use to set the midpoint, keeping an eye on the pixel level display in the Information window to identify pixels with a neutral input value (look for pixels that you think should be a neutral gray color in the final image). With the cursor over the target pixel, click the mouse button. The input value for the selected pixel will be used as the reference value for the midpoint. The cursor will return to its original shape, and the image will automatically be altered to reflect the new value for midpoint.

Editing Curves Directly

Fine adjustments can be made to brightness and contrast in specific portions of the tone range by adding additional points to the curves for each channel. These points can be freely adjusted by dragging them into new positions, changing the shape of the curve. Steepening the slope in a given portion of the curve will enhance contrast in that portion of the tone range. Changing the curve so that input levels in a given portion of the tone range are mapped to higher output levels will brighten tones in the affected tone range; similarly, changing the curve to map input levels to lower output levels will darken tones in the affected range.

Adding New Points to the Curve

Move the cursor over the curve edit display and click once to enter curve edit mode. Move the cursor to the position where you would like to add a new point, then click. A new point will be added at this position and the curve will automatically be adjusted to pass through this point. The position of the point can be adjusted by dragging it to a new location within the curve edit display. The image in the active window will automatically be adjusted to reflect changes to the curve.

Removing Points from the Curve

Points can be removed from the curve by dragging them out of the curve window.

Resetting the Active Curve to Linear

The default linear curve for the current channel can be restored by clicking the button in the Curves window.

Resetting All Curves to Linear

To reset all curves to linear, click the button. All curves will be reset and the RGB master channel will be displayed in the Curve window.

The Curves Settings Menu

Selecting **Curves** from the **Settings** menu displays a sub-menu of options that can be used to save and recall tone adjustment settings or to reset all curves to linear.
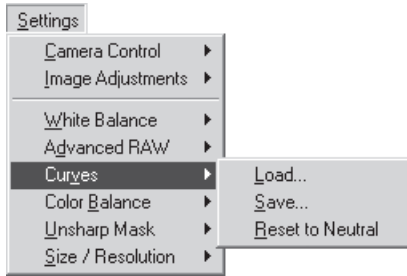
In the Windows version of Nikon Capture 2, the **Curves** menu can be displayed by right-clicking in the Curves window.

Load…:   Select this item to load curves previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".ncv" will be displayed). The settings in the Curves window will instantly revert to the saved settings.

Save…:   Select this item to save curves for all channels to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current curves (in the Windows version of Nikon Capture 2, curves are saved with the extension ".ncv").

Reset to Neutral: Resets all curves to linear.
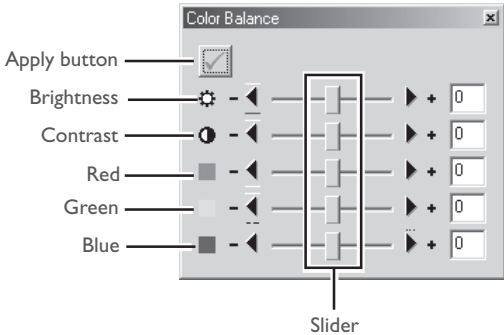

🔍 Apply Button Status

The status of the Apply button is not recorded when curves are saved. If you save curves with the Apply button in the Curves window on and later load these settings with the Apply button off, the saved settings will not apply to the image in the active window until you turn the Apply button on.

Color Balance

The Color Balance window offers simple controls for adjusting overall brightness, contrast, and color balance for the entire image. Unlike the controls in the Curves window, however, the Color Balance window does not allow you to make changes that affect only a portion of the tone range.

Adjusting Brightness, Contrast, and Color Balance

1 Select **Color Balance** from the **View** menu.
The Color Balance window will be displayed.

✅ Color Balance and Curves

Color Balance and curves can not be used together. If the controls in the Curves window are active, the controls in the Color Balance window are disabled. If the Color Balance controls are active, the controls in the Curves window are disabled. Only one of color balance or curves can be applied when a modified image is saved.

The Apply Button

Changes to curves only take effect when the Apply button at the top left corner of the Curves window is checked. When this button is checked, any changes to curves will be visible immediately in the image in the active window. The Apply button can be turned on and off for a quick "before-and-after" comparison, allowing you to determine whether changes are having the desired effect.

2 If the Apply button is off, turn it on.

3 Adjust brightness, contrast, and color balance using the options in the Color Balance window.

Adjusting Overall Brightness

The brightness slider adjusts brightness for the entire image. Dragging the brightness slider in the + direction brightens all the colors in the image, making the image as a whole more white. Dragging the slider in the – direction darkens all the colors in the image, making the image as a whole darker and less distinct. Unlike adjustments to the midpoint in the Curves window, this setting applies equally to shadows and highlights, producing a flat, low-contrast image. A value for brightness between –50 and +50 can be entered directly in the text box to the right of the slider.

Adjusting Image Contrast

Dragging the contrast slider in the + direction heightens the difference between highlights and shadows in the image, increasing contrast. Dragging the slider in the – direction decreases the difference between light and dark portions of the image, lowering contrast. A value for contrast between –50 and +50 can be entered in the text box to the right of the slider.

Adjusting Color Balance

While the brightness slider adjusts brightness for the image as a whole, the three color-balance controls allow the user to adjust brightness for each color individually. For example, dragging the red slider in the + direction brightens the red portions of the image, making the image as a whole more red. Dragging it in the – direction dims the red elements in the image, bringing out the remaining colors. Color balance can also be set by entering values directly in the text boxes to the right of the sliders.

The Color Balance Settings Menu

Selecting **Color Balance** from the **Settings** menu displays a sub-menu of options that can be used to save and recall Color Balance settings or to reset brightness, contrast, and color balance to zero.

Settings	
Camera Control ▶	
Image Adjustments ▶	
White Balance ▶	
Advanced RAW ▶	
Curves ▶	
Color Balance ▶	Load...
Unsharp Mask ▶	Save...
Size / Resolution ▶	Reset to Neutral
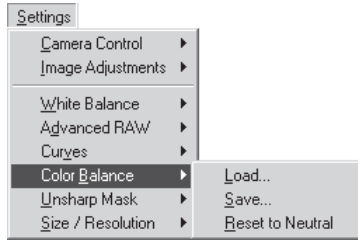
🔍 **Right-Button Menu (Windows)**

In the Windows version of Nikon Capture 2, the **Color Balance** menu can be displayed by right-clicking in the Color Balance window.

Load…:   Select this item to load brightness, contrast, and color balance settings previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".nca" will be displayed). The settings in the Color Balance window will instantly revert to the saved settings.

Save…:   Select this item to save brightness, contrast, and color balance settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current Color Balance settings (in the Windows version of Nikon Capture 2, Color Balance settings are saved with the extension ".nca").

Reset to Neutral:
            Resets all brightness, contrast, and color balance settings to zero.


Apply Button Status

The status of the Apply button is not recorded when color adjustment settings are saved. If you save color adjustment settings with the Apply button in the Color Balance window on and later load these settings with the Apply button off, the saved settings will not apply to the image in the active window until you turn the Apply button on.

Unsharp Mask

Using Unsharp Mask, the user can increase the sharpness of photographs by making edges more distinct. Unsharp Mask works by increasing the contrast of the edges in the image while leaving other areas untouched. The amount of sharpness is determined by three factors: intensity, halo width, and threshold.

Creating Unsharp Masks

1 Select **Unsharp Mask** from the **View** menu.
The Unsharp Mask window will be displayed.
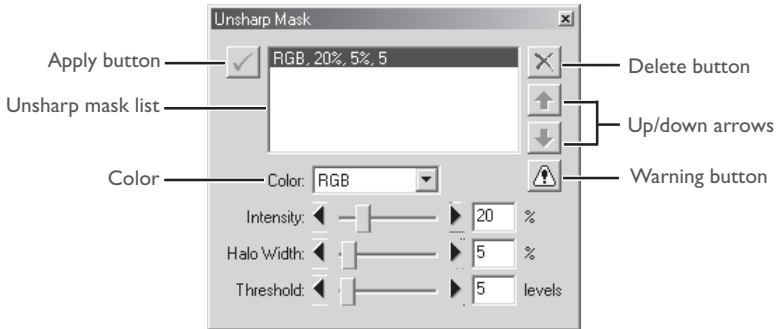
2 If the Apply button is off, turn it on.

☑ The Warning Button

A warning button appears if the image in the active window is displayed at a zoom ratio too low to allow the effects of Unsharp Mask to be displayed. Click the button to view the warning.

◉ The Apply Button

Changes to Unsharp Mask only take effect when the Apply button at the top left corner of the Unsharp Mask window is checked. When this button is checked, any changes to Unsharp Mask will be visible immediately in the image in the active window. The Apply button can be turned on and off for a quick "before-and-after" comparison, allowing you to determine whether changes are having the desired effect.

3 Create an Unsharp Mask.

Unsharp Mask can be applied to all the colors in the image or selectively to any combination of red, green, and blue channels. Select a combination of colors from the color pop-up menu. The Unsharp Mask you create will be applied only to edges in the selected colors.

4 Select values for intensity, halo width, and threshold.

Intensity:	The amount the contrast of edges will be increased. Too great an intensity will degrade your image rather than sharpening it.
Halo Width:	The size of the areas that will be affected. The greater the halo width, the wider the edges in the sharpened image will appear. Too large a value for halo width will produce a "halo" along edges in the image.
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 Unsharp Mask will be applied, with the result that only more distinctly contrasting edges will be affected.

5 Repeat steps 1–4 to create additional masks for different color combinations.

The controls in the Unsharp Mask window allow you to select multiple combinations of colors that can be sharpened to different degrees. As new masks are created, they will be added to the end of the Unsharp Mask list. Masks apply in the order listed. To change the order in which masks apply, select a mask in the Unsharp Mask list and click the up arrow to move it up in the list, or the down arrow to move it down. To delete an Unsharp Mask from the list, select it and click the delete button.
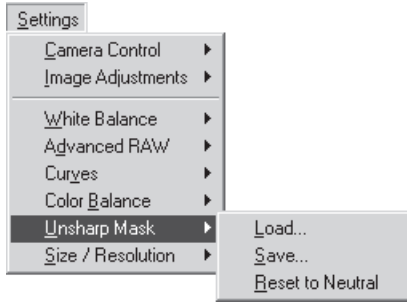

Unsharp Mask

Unsharp Mask sharpens edges without affecting color balance by making adjustments only to luminosity (brightness). The effect is the same as performing Unsharp Mask with the Luminosity channel selected in the Adobe Photoshop Lab color model. If Unsharp Mask is applied to a single channel, such as red, the values for ab (chrominance) are used to determine what points in the image are red, and Unsharp Masking applied to the Luminosity channel for those points only.

No sharpening will be applied if Intensity is set to zero. Intensity must be set to at least 1% if sharpening is to apply.

The Unsharp Mask Settings Menu

Selecting **Unsharp Mask** from the **Settings** menu displays a sub-menu of options that can be used to save and recall Unsharp Mask settings or to delete all masks currently displayed in the Unsharp Mask window.

In the Windows version of Nikon Capture 2, the **Unsharp Mask** menu can be displayed by right-clicking in the Unsharp Mask window.

Load…:	Select this item to load Unsharp Masks previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".num" will be displayed). The settings in the Unsharp Mask window will instantly revert to the saved settings.
Save…:	Select this item to save Unsharp Mask settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current Unsharp Mask settings (in the Windows version of Nikon Capture 2, Unsharp Mask settings are saved with the extension ".num").

Reset to Neutral:

Deletes all Unsharp Masks currently displayed in the Unsharp Mask window.

Apply Button Status

The status of the Apply button is not recorded when Unsharp Mask settings are saved. If you save Unsharp Mask settings with the Apply button in the Unsharp Mask window on and later load these settings with the Apply button off, the saved settings will not apply to the image in the active window until you turn the Apply button on.

Output Size and Resolution

The Size/Resolution window is where you specify the final ("output") size of the portion of the image that will be saved when **Save as…** is selected from the **File** menu. The choice of settings in the Size/Resolution window depends on how you intend to use the image and the amount of storage space you have available. Some examples are given below.

If the image will be used in printing or desktop publishing…
…size and resolution will be dictated by the resolution of the output device and the physical size of the image when printed, measured in centimeters or points rather than pixels.
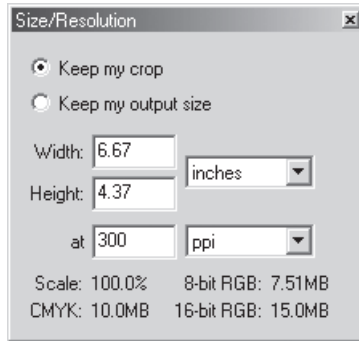
If you intend to use the image on a web page…
…specify output size in pixels, keeping file size to a minimum for rapid downloads. Resolution in this case is not an issue.

Adjusting Size and Resolution

1 Select **Size/Resolution** from the **View** menu.
The Size/Resolution window will be displayed.

Right-Button Menu (Windows)

In the Windows version of Nikon Capture 2, the **Size/Resolution** menu can be displayed by right-clicking in the Size/Resolution window.

**2** Make changes to options as described below.

Keep my crop:

When **Keep my crop** is selected, you can use the mouse to adjust the size and position of the current crop as desired. If you enter a new value for height or width in the Size/Resolution window, the remaining dimension changes automatically to maintain a constant height-width aspect ratio, and scale is adjusted to reflect the new dimensions (scale can not be increased beyond 200%). If the image can not be output at the current resolution using the new dimensions, resolution will automatically be adjusted to an appropriate value. This option is useful when you want to specify height and width after selecting a crop.

Keep my output size:

Keep my output size locks output dimensions and file size at their current values, setting the aspect ratio of the current crop according to the dimensions input in the Size/Resolution window. This height-width aspect ratio will be maintained when you adjust the size of the crop in the active window, and scale will be adjusted to reflect changes to the size of the crop (scale can not be increased beyond 200%). If the image can not be output at the current resolution using the new dimensions, resolution will automatically be adjusted to an appropriate value. This option is useful when you want to set the output dimensions and file size of the final image before selecting a crop.

Width/Height:

The output dimensions for the current crop can be entered in these text boxes. The units used to describe output dimensions can be chosen from the menu to the right of the text boxes.

inches ▼
pixels
inches
mm
cm
picas
points
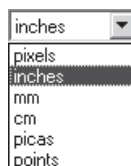
at:

The **at** text box is where you enter the output resolution. This text box is not active if the unit chosen for output size is "pixels," when resolution is fixed at 300 ppi. The value chosen at other settings should reflect the resolution of the output device on which the final image is to be printed. The units for resolution can be selected from the resolution menu, which offers a choice of pixels per inch (ppi) or pixels per centimeter (ppcm). The default resolution is 300 ppi.
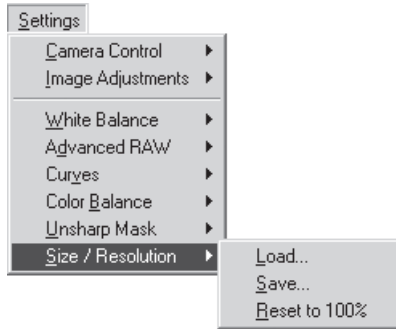
ppi ▼
ppi
ppcm

🔍 Scale/File Size

Scale (output size as a percentage of input size, maximum 200%) is displayed at the bottom of the Size/Resolution window, together with the uncompressed file size of the image that would be created at current settings. File size depends on the color model (RGB or CMYK) and, in the case of RGB images, on the pixel bit-depth that will be used when the image is saved. Separate file sizes are shown for CMYK and for eight-bit and sixteen-bit RGB.

The Size/Resolution Settings Menu

Selecting **Size/Resolution** from the **Settings** menu displays a sub-menu of options that can be used to save and recall size resolution settings or to reset size and resolution to default values.

Settings		
Camera Control	▶	
Image Adjustments	▶	
White Balance	▶	
Advanced RAW	▶	
Curves	▶	
Color Balance	▶	
Unsharp Mask	▶	
Size / Resolution	▶	Load...
		Save...
		Reset to 100%

Load…:   Select this item to load size and resolution settings previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".nsr" will be displayed). The settings in the Size/Resolution window will instantly revert to the saved settings.

Save…:   Select this item to save size and resolution settings to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for the current size and resolution settings (in the Windows version of Nikon Capture 2, size and resolution settings are saved with the extension ".nsr").

Reset to 100%:
Enlarges the crop to include the entire image. Resolution will be reset to the default value of 300 ppi (118.11 ppcm).

✔ Saving Size and Resolution Settings

The units selected for size and resolution are not saved when **Save…** is chosen from the **Size/Resolution** sub-menu.

🖱 Right-Button Menu (Windows)

In the Windows version of Nikon Capture 2, the **Size/Resolution** menu can be displayed by right-clicking in the Size/Resolution window.

Batch Processing

This chapter describes how to use batch processing with images that have been captured to the computer's hard disk.

Batch Processing

Nikon Capture 2 supports automated processing of multiple images (batch process-
ing). Batch processing is used to automate image processing, capturing images, applying pre-defined image adjustment settings, and saving images to disk automatically. It is most effective when applied to a series of photo-
graphs taken under identical conditions.

When using batch processing, we recommend that you open one of the images to be processed in Nikon Capture 2 and edit image adjustment settings (white balance adjustment, advanced RAW set-
tings, curves, color adjustment, Unsharp Mask, and size and resolution) to produce the desired result. You can then save these settings in a joint settings file using the **Save…** option in the Image Adjustment Control Panel (👁 pg. 96). By selecting the resulting settings file in the Batch dialog, you can perform the same adjustments on all the images processed. In studio settings where a variety of shooting conditions can be replicated with ease, you can create separate settings files for commonly encountered conditions and use these settings to automate repetitive image enhancement operations.

This chapter describes how to use batch processing with files that have already been saved to the computer's hard disk. For information on batch processing of images captured directly from the cam-
era, see "Capturing Photographs" (👁 pg. 139).


✎ **Limitations on Batch Processing**

Batch processing can only be used with unedited images captured from the camera and images that have been saved in NEF format from Nikon Capture 2 (images saved in NEF format from Nikon Scan 3 can not be processed).

🔍 **Before Using Batch Processing**

Batch processing is used to perform the operations specified in the Image Enhancements section of the Batch dialog on all files in a selected folder. To ensure that desired results are achieved, we recommend processing a test image before beginning batch processing. Batch processing can not be used to adjust settings separately for each image; instead, the images must be opened one at a time and separate adjustments made manually for each image.

1 Select **Batch** from the **File** menu or click the 🖺 button.

The Batch dialog will be displayed.
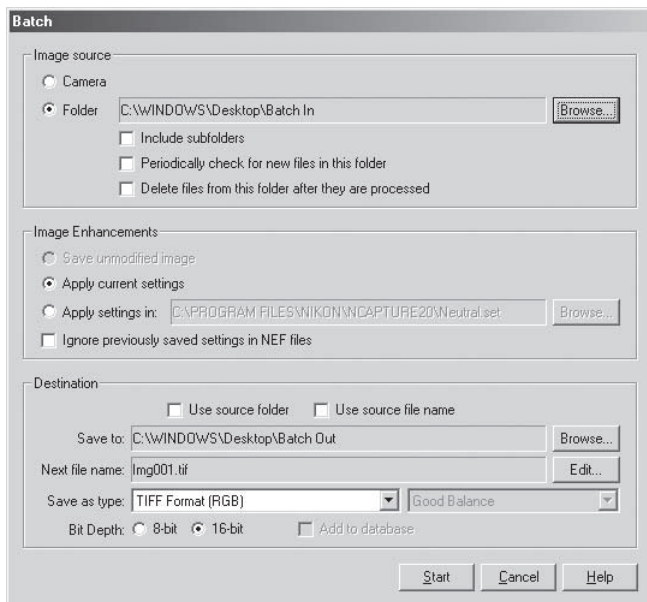
🔍 **Selecting Folders for Batch Processing**

For improved efficiency, create two folders that are used only for batch processing. The images to be processed can be copied to one of these folders, which might be named "Batch In." If the **Delete files from this folder after they are processed** option is checked, these files will automatically be deleted from the "Batch In" folder after processing, allowing you to copy more files to the folder without worrying about the files already there (be sure to leave a copy of any images you would like to keep in their original state in another folder).

2 In the Image source section, choose the folder containing the images to be processed.

Folder: Select this option to process all images in a specified folder on your computer's hard disk. When this option is selected, the chosen folder will be displayed in the

button and navigate to the desired location.

Browse: Clicking this button displays a dialog where you can choose the folder containing the images to be processed. This button is inactive when the **Camera** option is selected.

Include subfolders:
Select this option to process all images in any sub-folders under the specified folder.

Periodically check for new files in this folder:
When this option is selected, Nikon Capture 2 will check for new images in the specified folder once every ten seconds.

Delete files from this folder after they are processed:
Select this option to delete image files from the selected folder after processing. A warning dialog will be displayed before batch processing begins.

3 In the Image Enhancements section, specify the operations to be performed on each image.

Apply current settings:

Select this option to process the images in the selected folder using the settings currently in effect in the White Balance, Advanced RAW, Curves, Color Balance, Unsharp Mask and Size/Resolution windows.

Apply settings in:

Select this option to process the images in the selected folder using joint settings created using the **Save…** option in the Image Adjustment Control Panel (🖭 pg. 96). When this option is selected, a joint settings file can be selected by clicking the **Browse** button to its right.

Ignore previously saved settings in NEF files:

Select this option to override the settings saved with NEF files, replacing them with the settings chosen in the Image Enhancements section.

🔍 **Existing Image Adjustment Settings**

When the **Ignore previously saved settings in NEF files** option is checked, any changes to settings stored with files saved in NEF format will be ignored, and the settings in the selected settings file applied. If you have processed a series of NEF images separately and want to save them all as sixteen-bit TIFF, you can turn this option off and use batch processing to save all the images to a single folder in sixteen-bit TIFF format.

4 In the Destination section, choose options for saving the processed images.

Use source folder:

When this option is selected, processed images will be saved to the same folder as the original.

Use source file name:

When this option is selected, processed images will be saved under the same name and in the same location as the original images, although the file extensipRÄwill change if the chosen file format differs from the original.

Save to: This text box shows the folder to which the images will be saved after processing. To choose a new folder, click the **Browse** button to the right of the text box and navigate to the desired location. This option is not available when **Use source folder** is selected.

☑ **File Naming Conventions**

Windows: *In environments that do not support long file names*, the maximum length is eight characters; file names may not contain spaces, quotes, or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Where long file names are supported, the maximum length is 255 characters. File names may not contain quotes or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Macintosh: The maximum length for Macintosh file names is thirty-one characters. Colons (":") are not allowed.

Next file name:

>   This text box shows a sample of the file names that will be used when saving the images after processing. This text box shows a sample of the file names that will be used when saving the images after processing. To choose a new file name, click the **Edit** button. The **Generate Multiple File Names** dialog will be displayed.

<div align="center">

Generate Multiple File Names

Prefix: Img   Suffix:

Sequence Length: ◀ - ┼── ▶ 3

Starting Sequence Number: 1

Sample: Img001.tif

[<u>O</u>K]   [<u>C</u>ancel]   [<u>H</u>elp]

</div>

>   Using the sample file name as your guide, enter a prefix and suffix and choose the starting number and number of digits for automatic file numbering. This option is not available when **Use source folder** is selected.

Save as type:

>   Choose the file format that will be used to save the processed images. For more information on the options available, see "File Format and Image Quality" (🖐 pg. 86).

Add to database:

>   If this option is checked, images will be catalogued in Canto Cumulus 5 database software as they are saved. This option is only available if: Canto Cumulus 5 is installed, **Add saved images to Canto Cumulus 5** has been selected in the File Locations tab of the Preferences dialog, and a Canto Cumulus 5 catalog file has been selected.
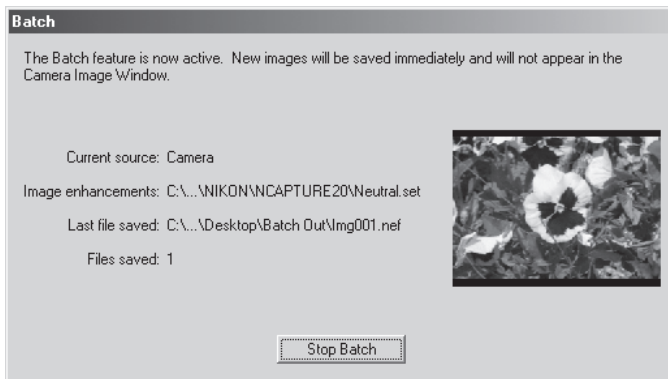

🔍   Error Messages

If an invalid file name or other error is identified in the batch processing dialog, a message will be displayed. Return to the batch processing dialog and adjust settings as directed in the message.

5 Click **OK** to put the selected settings into effect.

6 A progress dialog will be displayed.

To stop batch processing before all images have been processed, click **Stop Batch**.

7 Click **Batch Complete**.
When batch processing is complete, the **Stop Batch** button will change to **Batch Complete**.
Click **Batch Complete** to exit the batch processing dialog.

Capturing Photographs

This chapter describes how to capture photographs from the camera and control camera settings from your computer using Nikon Capture 2.

Capturing Photos as They Are Taken

When your Nikon digital camera is connected in PC mode and Nikon Capture 2 is running, you can save photographs directly to your computer's hard disk as they are taken, rather than to the camera's memory card. You can operate the camera directly, or make changes to settings and release the shutter remotely from the Camera Control window in Nikon Capture 2, where you can confirm changes to settings as they are made. For more information, see "Camera Control" (📷 pg. 163).

🖉 Images Stored on the Camera Memory Card

Nikon Capture 2 can not be used to capture images already stored on the camera memory card directly from the camera. Use Nikon View 4 or a card reader to capture images from the memory card.

🖉 Important

The camera and computer must be correctly connected when capturing images from the camera.

Readying the Camera

Before capturing images to the computer, you will need to turn the camera on and connect it to the computer. We recommend that an EH-4 AC adapter (available separately) be used to power the camera while it is connected to a computer.

1 Turn the camera on and set the mode dial to "PC" (PC mode).
Communication between the camera and your computer is only possible when the camera is on and in PC mode.
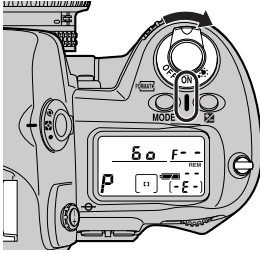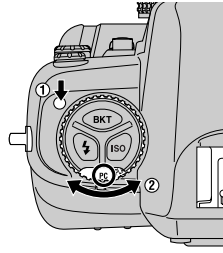
Turn camera on   Turn mode dial to "PC"

2 Connect the camera to the computer using an IEEE 1394 cable (available separately).
See the camera *User's Manual* and the documentation provided with your computer or IEEE 1394 expansion board for more information.

✐ Connecting and Disconnecting the IEEE 1394 Cable

We recommend that you connect and disconnect the interface cable while the camera is on. The camera and computer require some time to establish communication after the cable has been connected or disconnected; allow a brief pause before beginning operations. Disconnect the interface cable before turning the camera off.

Taking Photographs from the Camera

1 Start Nikon Capture 2.
See "Tutorial: Getting Started" for more information.

2 Check the status of the connection between the computer and the camera.
If the two are properly connected, the connection status indicator at the bottom left corner of the Nikon Capture window (Windows) or tool palette (Macintosh) will be green.

Windows

Macintosh

Connection status is also displayed in the control panel on top of the camera. If Nikon Capture 2 is started with the camera connected, the number of exposures remaining will show **PC**.

🔍 Camera Settings

- In PC mode, Custom Setting 30 controls the choice of single-frame and continuous advance when taking photographs (see the section on Custom Settings in the camera *User's Manual*). Custom Setting 30 can either be set from the camera itself or remotely from the Mechanical tab of the Camera Control window in Nikon Capture 2 (🔳 pg. 173).
- The camera's review function is disabled when the camera is connected to a computer in PC mode.
- Photographs taken in continuous shooting mode are stored in a temporary buffer in the camera's memory, making it possible to take a picture while the previous photograph is being transferred to the computer. If Custom Setting 26 is set to "1" when the camera is in continuous shooting mode, although only one photograph will be taken each time the shutter-release button is pressed, you will be able to take the next photograph without waiting for the preceding picture to be transferred to the computer.


✎ Custom Setting 28

If Custom Setting 28 is set to "0," preventing the camera from taking RAW images, when Nikon Capture 2 is started with the camera connected, a warning will be displayed. Click **OK** to set Custom Setting 28 to "1," allowing photographs to be saved as uncompressed RAW images.

3 Adjust camera settings, frame a photograph, and check focus.
See the camera *User's Manual* for details.

4 Take a picture.
Press the shutter-release button on the camera all the way down to take a picture. The photograph will be captured and displayed in the Camera Image window.
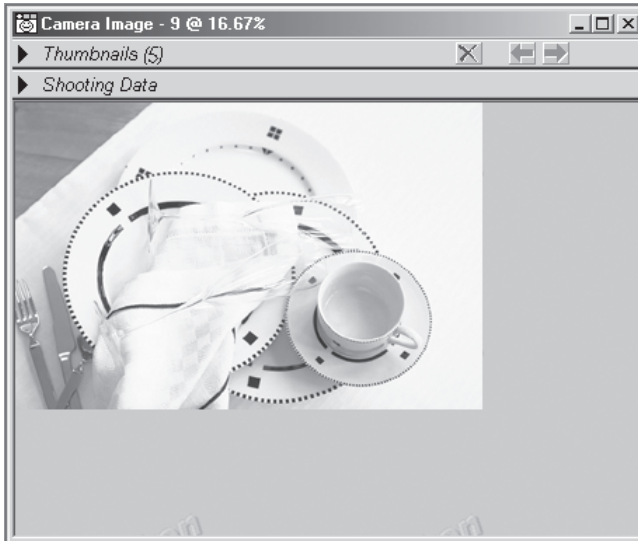
Each time the shutter is released, the resulting photograph will be displayed in the Camera Image window.

The Connection Status Indicator

The color of the connection status indicator shows the status of the connection between the computer and the camera.

Green: Normal connection. The camera is ready to transfer data or data are being transferred.

Red: No connection. Either the camera is not connected, or the connection is not functioning properly. See "Troubleshooting" (📖 pg. 246) for more information.

Clicking the connection status indicator displays a message detailing connection status.

Taking Photographs Remotely Using Nikon Capture 2

Using the Camera Control window, you can adjust camera settings and take photographs from your computer.

1 Click the camera tool button (📷) or select **Camera Control** from the **View** window.
The Camera Control window will be displayed.

```
Camera Control                                            ⊠
 Exposure 1 │ Exposure 2 │ Storage │ Mechanical │

     Exposure Mode: │Aperture Priority        ▼│
     Shutter Speed: ◄ ──────┃────── ►  1/60 sec
         Aperture: ◄ ─┃──────────── ►  f/3.5
    Exposure Comp.: ◄ ─────┃────── ►  0 EV
   Flexible Program: ◄ ──────┃───── ►  0 Step(s)

    ┌─────────────────────────────────────┐
    │  ▣    6o  ꜰ3.5      A               │
    └─────────────────────────────────────┘
         │ AF and Shoot │   │  Shoot  │
```
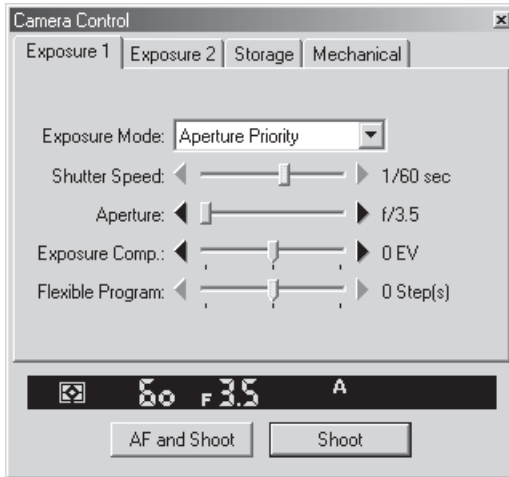
The camera settings currently in effect can be viewed in the Camera Control window's four tabs: Exposure 1, Exposure 2, Storage, and Mechanical.

2 Adjust camera settings.
Adjust camera settings in the Camera Control window. For details, see "Camera Control" (📙 pg. 163).

3 Take a photograph.
After adjusting camera settings, take a photograph by clicking **AF and Shoot** or **Shoot**.

144

Working with the Camera Image Window

Images may displayed in either the Camera Image window or in separate image windows. Image adjustment and save operations are performed on the image in the active window. For more information on image windows, see "Working with Image Windows" (pg. 67).

The Camera Image Window

The Camera Image window is where you view thumbnail previews of images taken while the camera and computer are connected, and where you display selected images for preview or editing.

Title bar   Thumbnail

Thumbnails section

Total number of images

Shooting Data section

Preview section

Camera Image - 9 @ 16.67%

These were the settings at the time this image was taken:

Nikon D1H
5/12/2001 5:26:01.2 PM
Color
Data Format: RAW (12-bit)
Compression: None
Image Size: Medium (2000 x 1312)

Lens: 28-105mm f/3.5-4.5
Focal Length: 28mm
Exposure Mode: Aperture Priority
Metering Mode: Multi-Pattern
1/80 sec - f/3.5
Exposure Comp.: 0 EV

Exposure Difference: 0 EV
Flash Sync Mode: Not Attached
Sensitivity: ISO 200
Color Mode: Mode I (sRGB)
Hue Adjustment: 3

🔍 The Connection Status Indicator

Only images taken while the camera and computer are connected are displayed in the Camera Image window. Images taken when the camera was not connected can not be displayed in the Camera Image window, although they can be opened in independent image windows.

To open or close the Camera Image window, select **Camera Image** from the **View** menu. You can perform the same operation by clicking the 🔲 button in the toolbar.

The Title Bar
The title bar of the Camera Image window provides information about the selected image.

> File name/thumbnail index:
>> If a photograph taken with the camera is displayed in the Camera Image window, the title bar will show "Camera Image" followed by the thumbnail index assigned by Nikon Capture 2.
>
> Zoom ratio: The zoom ratio is the amount the image in the Preview area is zoomed in or out, as a percentage of the original size. The original size for display purposes is determined by the number of pixels in the image and the resolution of the monitor and does not reflect the physical dimensions of the image when printed.

The Thumbnails Section
The Thumbnails section shows thumbnail previews of the images captured from the camera.

> Thumbnail: Click on a thumbnail to display the image in the Preview section of the Camera Image window. The number displayed below each thumbnail is the thumbnail index assigned by Nikon Capture 2. The thumbnail index can be reset to one in the Thumbnails tab of the Preferences dialog (🔯 pg. 198).
>
> ✕ : Click this button to delete the selected image.

The Thumbnails section can be hidden or displayed by clicking the triangle at its top left corner, or by selecting **Thumbnails Section** from the **View** menu.

🔍 **When the Thumbnails Section Is Hidden**

Even when the Thumbnails section is hidden, thumbnails can still be deleted or selected for display in the Camera Image window.

Click to open the Thumbnails section ——

Total number of images
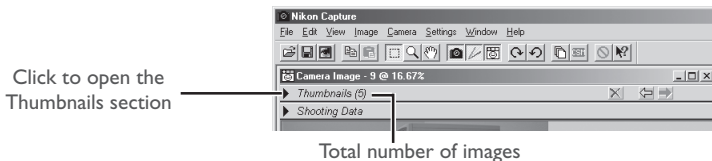
✕ Click to delete the image displayed in the Camera Image window.
⇦ Click to display images recorded before the current image.
⇨ Click to display images recorded after the current image.

The Shooting Data Section

The Shooting Data Section shows photo information (🔖 pg. 69).

The Shooting Data section can be hidden or displayed by clicking the triangle at its top left corner, or by selecting **Shooting Data Section** from the **View** menu.

The Preview Section

The currently selected image is previewed in this area. Any changes made during editing are reflected in the image in the Preview section. No preview is displayed when multiple thumbnails are selected.

🔍 **Output Size and Resolution for New Files**

The first time an image is captured or opened in Nikon Capture 2, size and resolution will be set the values in the default image settings file or to the values specified for the previous image. The choice between these two options is made in the Settings for Next Camera Image panel in the General tab of the Preferences dialog.

🔍 **Right-Button Menu (Windows)**

Clicking on the Preview section with the right mouse button displays a menu of options identical to the **Image** menu.

Viewing Thumbnails

Using thumbnails (small preview images), you can view at a glance all the photographs that you have captured to your computer. To view thumbnails, click the arrow at the top of the Thumbnails section.
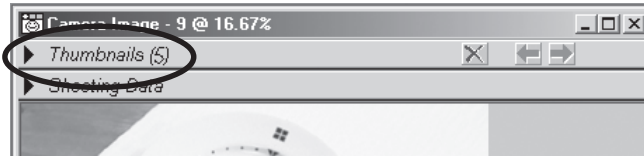
The Thumbnails section shows the images that have been captured to the thumbnail folder on the computer's hard disk, including any previously captured images that have not been deleted.

Thumbnails section
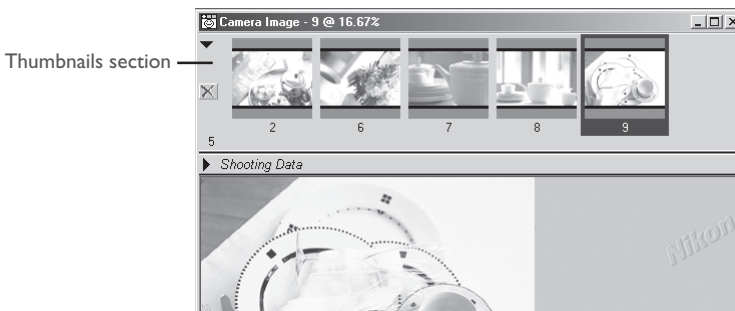
Images that have been captured to the computer are temporarily stored at full size in a thumbnail folder on the hard disk. The folder used for temporary storage of thumbnails can be chosen from the File Locations tab of the Preferences dialog (pg. 197). Any images stored in this folder are shown in the Thumbnails section. If an image is deleted from the Thumbnails section, it will also be deleted from the thumbnails folder.

Viewing Photo Information

Photo information for the image displayed in the Preview section of the Camera Image window can be viewed in the Shooting Data section.

1 Display the Shooting Data section.
Click the arrow at the top left corner of the Shooting Data section (the Shooting Date section is located just beneath the Thumbnails section).
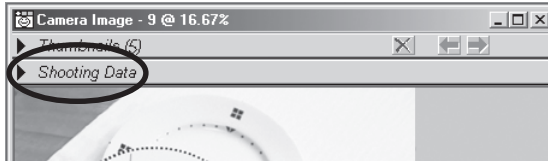
The Shooting Data section shows the date and time of recording and the shooting mode in effect at the time the photograph was taken (👁 pg. 69).
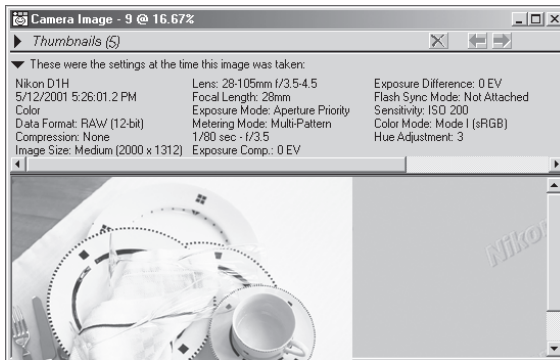
2 Close the Shooting Data section.
To close the Shooting Data section, click the triangle at its top left corner.

Selecting Thumbnails

Select thumbnails from the Thumbnails section to view, edit, or save the associated photograph. When you click the desired thumbnail, it will be highlighted with a colored border and the image will appear in the Preview section.
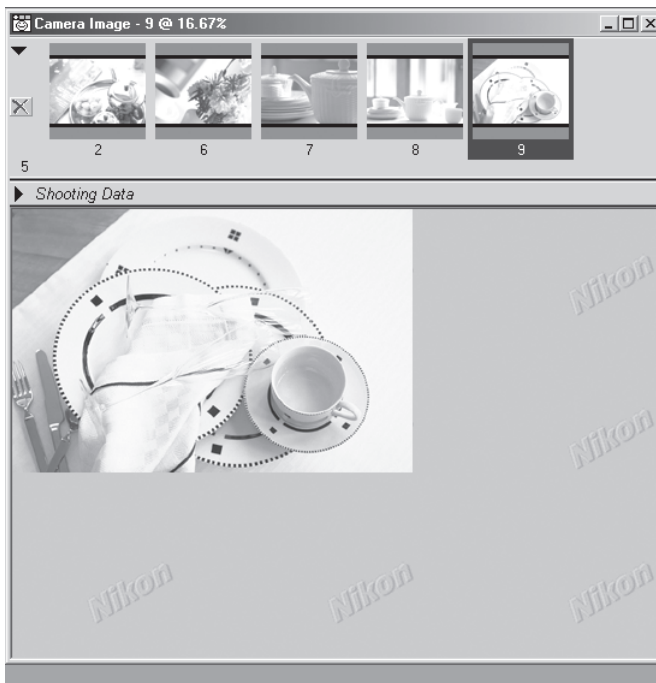
Selecting Multiple Thumbnails

Select multiple thumbnails to perform such operations as saving images or deleting thumbnails on several images at once. Note that when more than one thumbnail is selected, no image will be displayed in the Preview section of the Camera Image window. Select only one thumbnail at a time when editing images.

Windows
To select multiple images, hold down the Ctrl key while clicking each thumbnail in turn, or hold down the shift key while clicking two thumbnails to select the thumbnails and all images between them.

Macintosh
To select multiple images, hold down the command key while clicking each thumbnail in turn, or hold down the shift key while clicking two thumbnails to select the thumbnails and all images between them.

Selecting All Thumbnails
To select all thumbnails, choose **Select All Thumbnails** from the **Image** menu.

Deselect All Thumbnails
To deselect all thumbnails, choose **Deselect All Thumbnails** from the **Image** menu.

Image	
Open in Photoshop	
Select Entire Image	
Flip	▶
Rotate	▶
Show Grid Lines	Ctrl+G
Use for Camera Curves Sample	
Select All Thumbnails	Ctrl+A
Deselect All Thumbnails	Ctrl+D
Remove Selected Thumbnails	Ctrl+Delete
Remove All Thumbnails	
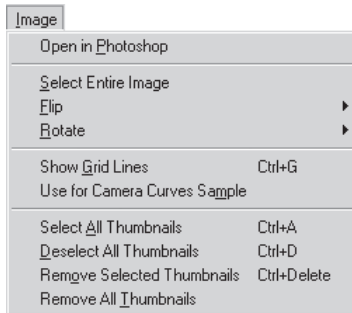
Creating a Copy of an Image

Copies of photographs selected in the Thumbnails section can be opened in independent image windows. To open a copy of an image, either:

- double-click the thumbnail in the Camera Image window Thumbnails section, or
- select a thumbnail and choose **Create Copy** from the **File** menu.

A copy of the selected image will be opened in an image window.
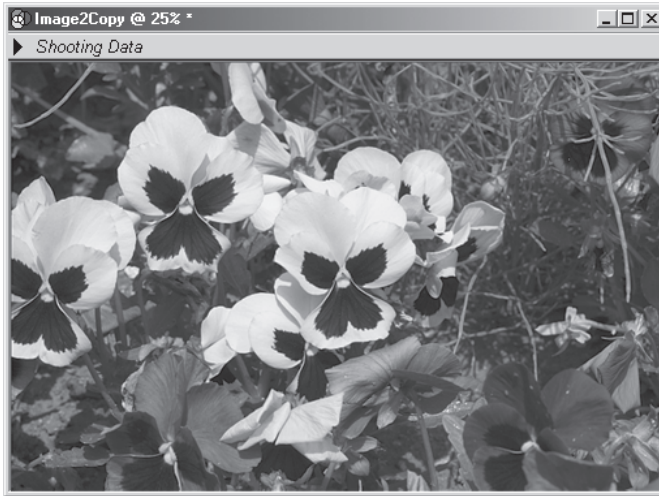
If an image window is active when **Create Copy** is selected, another copy of the image it contains will be opened in a separate image window.

⬛ Copy and Original

Any changes to settings in effect when an image is copied will be reflected in the copy. Any subsequent changes to the copy, however, have no effect on the original. Similarly, any changes made to the original after it is copied have no effect on the copy. You can therefore apply one set of image enhancement operations to a copy and compare them with a different set of operations applied to the original.

Image Adjustment for Captured Photographs

The image in the Camera Image window can be processed as described in "Image Adjustment" (🔋 pg. 93).

White Balance (🔋 pg. 98)
Choose a white balance to suit a specific light source, or edit the white balance value in effect when the photograph was taken.

Advanced RAW (🔋 pg. 104)
Change the exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment settings from the values in effect when the photograph was taken.

Curves (🔋 pg. 107)
Edit tone curves and adjust brightness, contrast, and color balance to optimize curves for output on a specific device. Tone curves offer more precise control than the tools in the Color Balance window.

Color Balance (🔋 pg. 119)
Perform simple adjustments to the brightness, contrast, and color balance of the captured image.

Unsharp Mask (🔋 pg. 123)
Sharpen outlines in images that are indistinct.

Output Size and Resolution (🔋 pg. 127)
Adjust size and resolution according to how the image will be used.

🖉   White Balance and Advanced RAW

White Balance and Advanced RAW can only be applied to RAW images. If the image in the active window is JPEG or TIFF, the **White Balance** and **Advanced RAW** options in the **Image** menu are unavailable.

🖉   Color Balance and Curves

Color balance and curves can not be used together. If the controls in the Curves window are active, the controls in the Color Balance window are disabled. If the Color Balance controls are active, the controls in the Curves window are disabled. Only one of color balance or curves can be applied when a modified image is saved.

Saving Captured Images

The last step in capturing photographs from the camera is saving the pictures as image files. Nikon Capture 2 supports a variety of file formats; see pages 87–88 for information choosing a format suited to the task at hand.

1 Click the Save tool (🖫) or choose **Save** from the **File** menu.
The Save dialog will be displayed.
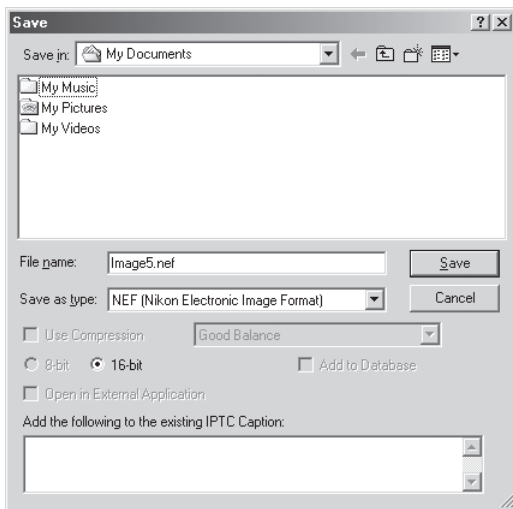
2 Navigate to the desired drive (volume) and folder.

3 Choose a file format.
For information on the formats available, see "Options for Saving Image Files" (👁 pg. 87).

Saving Multiple Captured Images

This section describes how to save multiple images simultaneously.

1 Select the images to be saved and choose **Save**.
In the Camera Image window, select the thumbnails corresponding to the images you want to save, then choose **Save** or **Save as…** from the **File** menu. A save dialog will be displayed.

2 Click **File Names…**.
The Generate Multiple File Names dialog will be displayed.
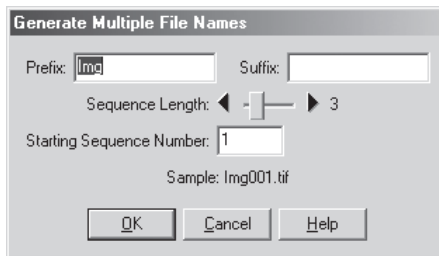
3 Choose options for automatic file name generation.

Using the sample file name as your guide, enter a prefix and suffix and choose the starting number and number of digits for automatic file numbering.

Prefix/Suffix: Enter a prefix or suffix of up to forty characters each (note that Macintosh file names can not exceed a total of thirty-one characters).

Sequence Length:

Choose the number of digits to be used for automatic file name generation. File numbers can be from two to eight digits long.

Starting Sequence Number:

Each file is assigned a number as it is saved. Numbers are assigned to files in ascending order, starting from this number.

4 Click **OK**.

This will return you to the save dialog.

5 Save the images.

After choosing a destination folder and setting other options, click the **Save** button to save the images to the specified location.

☑ File Naming Conventions

Windows: *In environments that do not support long file names, the maximum length is eight characters;* file names may not contain spaces, quotes, or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Where long file names are supported, the maximum length is 255 characters. File names may not contain quotes or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Macintosh: The maximum length for Macintosh file names is thirty-one characters. Colons (":") are not allowed.

Deleting Thumbnails

As the images in the temporary thumbnails folder occupy a considerable amount of disk space, it is recommended that you empty the temporary thumbnails folder when they are no longer needed.

1 Select the thumbnail(s) you want to delete.

2 Delete the selected thumbnails.
Choose **Remove Selected Thumbnails** from the **Image** menu or click the ✕ button in the Thumbnails section.

Deleting All Thumbnails
Select **Remove All Thumbnails** from the **Image** menu to remove all thumbnails from the Camera Image window and delete all image files in the thumbnail folder.

☑ **Before Deleting Thumbnails**

Once deleted, thumbnail image data can not be restored. Be sure that the data are no longer required before deleting thumbnail images.

🔍 **Deleting Thumbnails Automatically**

Two options for removing thumbnails automatically are available in the Thumbnails tab of the Preferences dialog.
- **Clear Camera Image Window on Exit**
  If this box is checked, a dialog will be displayed when you exit Nikon Capture 2, asking you whether you wish to delete all thumbnails.
- **Auto-Remove thumbnail after save**
  If this box is checked, the associated thumbnail will be removed when an image is saved.

Processing Photographs as They Are Captured

This section describes how the batch processing option can be used to process photographs automatically as they are captured. For information on performing batch processing on images that have already been saved to disk, see "Batch Processing" (pg. 131).

1 Select **Batch** from the **File** menu or click the 🗐 button.
The Batch dialog will be displayed.

2 Select **Camera**.

To process images as they are captured, select **Camera** from the options in the Image source section.

Camera: Select this option to process images as they are captured using automatic batch processing. This option is only available when the camera is connected to the computer. Selecting **Camera** disables the other options in the Image source section.

3 In the Image Enhancements section, specify the operations to be performed on each image.

Save unmodified image:

Select this option to save images exactly as captured from the camera, without modification. This option is only available when **Camera** is selected in the Image source section.

Apply current settings:

Select this option to process the images in the selected folder using the settings currently in effect in the White Balance, Advanced RAW, Curves, Color Balance, Unsharp Mask and Size/Resolution windows.

Apply settings in:

Select this option to process the images in the selected folder using joint settings created using the **Save…** option in the Image Adjustment Control Panel (📖 pg. 96). When this option is selected, a joint settings file can be selected by clicking the **Browse…** button to its right.

4 In the Destination section, choose options for saving the processed images.

Save to: This text box shows the folder to which the images will be saved after processing. To choose a new folder, click the **Browse…** button to the right of the text box and navigate to the desired location.

Next file name:

This text box shows a sample of the file names that will be used when saving the images after processing. To choose a new file name, click the **Edit** button. The **Generate Multiple File Names** dialog will be displayed.

```
Generate Multiple File Names

Prefix:  Img              Suffix:

         Sequence Length:  ◀  -├──  ▶  3

Starting Sequence Number:  1

              Sample: Img001.tif

         [   OK   ]   [ Cancel ]   [  Help  ]
```
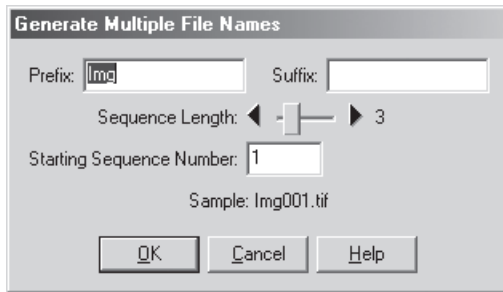
Using the sample file name as your guide, enter a prefix and suffix and choose the starting number and number of digits for automatic file numbering. This option is not available when **Save unmodified image** is selected.

Save as type:

Choose the file format that will be used to save the processed images. For more information on the options available, see "File Format and Image Quality" (🖼 pg. 86).

Add to database:

If this option is checked, images will be catalogued in Canto Cumulus 5 database software as they are saved. This option is only available if: Canto Cumulus 5 is installed, **Add saved images to Canto Cumulus 5** has been selected in the File Locations tab of the Preferences dialog, and a Canto Cumulus 5 catalog file has been selected.

5 Click **OK** to put the selected settings into effect.

6 Take photographs
Take photographs as described in the camera *User's Manual*.

7 A progress dialog will be displayed.
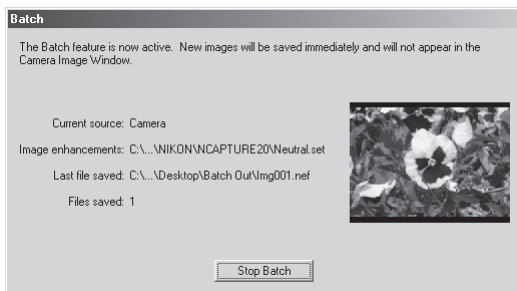
To end batch processing, click **Stop Batch**.

8 End batch processing.
Once you have finished taking photographs, click **Batch Complete** to end batch processing.

🔍 **Error Messages**

If an invalid file name or other error is identified in the batch processing dialog, a message will be displayed. Return to the batch processing dialog and adjust settings as directed in the message.

☑ **File Naming Conventions**

Windows: *In environments that do not support long file names*, the maximum length is eight characters; file names may not contain spaces, quotes, or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Where long file names are supported, the maximum length is 255 characters. File names may not contain quotes or any of the following characters: "\\" "/" ":" "," ";" "*" "<" ">" and "|".

Macintosh: The maximum length for Macintosh file names is thirty-one characters. Colons (":") are not allowed.

Camera Control

When your Nikon digital camera is connected to a computer running Nikon Capture 2, the Camera Control and Custom Settings windows allow you to control almost all aspects of camera operation remotely. This chapter describes the Camera Control and Custom Settings windows. For more information on camera settings, see the documentation provided with your camera.

The Camera Control Window

To adjust camera settings from the Camera Control window, click on the Nikon Capture camera tool button (📷) in the toolbar (Windows) or tool palette (Macintosh), or choose **Camera Control** from the **View** menu. The Camera Control window will be displayed.

Camera Control page selection tabs ——

Simulated LCD panel ——
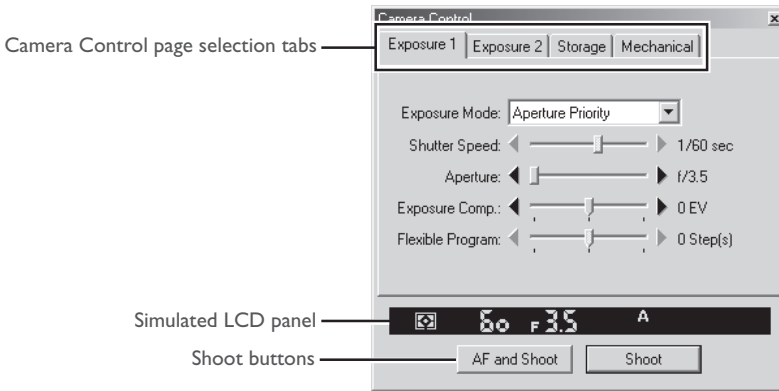
Shoot buttons ——

The Camera Control window shows current camera settings, which may be viewed by clicking the four page selection tabs. Camera settings can be altered using the controls in each tab as described below. The simulated LCD panel and the shoot buttons can be accessed from all four tabs.

✎ Verifying That the Camera is Connected

Before opening the Camera Control window, verify that the camera is connected and turned on. The color of the connection status indicator at the bottom left corner of the Nikon Capture window (Windows) or the bottom of the tool palette (Macintosh) shows the status of the connection between the computer and the camera. If the indicator is green, the camera is connected and ready to transfer data.

✎ Important

Changes made to settings in the Camera Control window only apply to photographs taken after the changes are made, not to photographs that have already been taken.

164

Simulated LCD Panel

The simulated LCD panel shows the information displayed in the camera's viewfinder, with the exception of camera errors. Clicking on an indicator in the panel opens the Camera Control window to the tab that controls the selected option, where adjustments can be made.

Shoot Buttons

Click either of these buttons to take a photograph at current settings.

AF and Shoot: When this button is clicked, the camera will perform an autofocus and then release the shutter to take a photograph. No autofocus operation will be performed when the camera is in manual focus mode.

Shoot: Click this button to take a photograph. If the selected focus mode is single-servo AF, an autofocus operation will be performed before the shutter is released.

Taking Photographs in Continuous Mode

When the camera is in PC mode, continuous shooting can only be performed using the camera shutter-release button. The shoot buttons in the camera control window can only be used to take one photograph at a time.

Camera Settings That Can Not Be Adjusted from Nikon Capture

The following operations can only be performed using the controls on the camera:
• taking consecutive photographs in continuous shooting mode
• continuous servo autofocus
• shutter speed, aperture, or autoexposure lock
• autofocus lock
• pressing the shutter-release button halfway to check focus without taking a photograph
• manual aperture adjustment using the lens aperture ring
• reactivating the camera after it has entered sleep mode
• capture preview, record-and-review, or autobracketing

The following settings are displayed in the Camera Control window but can not be adjusted in Nikon Capture:
• focus mode
• metering

The Exposure 1 Tab
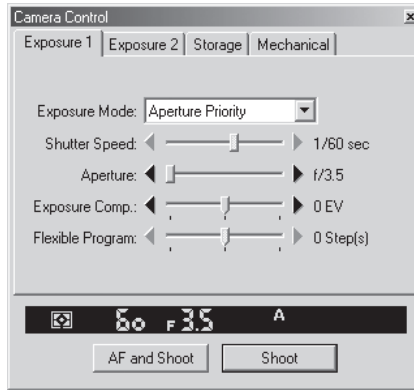
The following settings can be adjusted from the Exposure 1 tab:

Exposure Mode
The Exposure Mode menu contains the following four options:

Manual:	User controls both aperture and shutter speed.
Aperture Priority:	User sets the aperture and the camera automatically adjusts the shutter speed. This setting is useful when you want to give priority to depth of field: small apertures can bring background and foreground into focus, while wide apertures can be used to blur the background.
Speed Priority:	User sets the shutter speed and the camera automatically adjusts the aperture. High shutter speeds can be used to freeze motion, while low shutter speeds can blur moving objects.
Programmed Auto:	User can select combinations of aperture and shutter speed pre-programmed into the camera for various lighting conditions.

Shutter Speed

Shutter speed can only be adjusted in **Manual** and **Speed Priority** modes, when it can be set to values between Bulb and $^1/_{16,000}$ s ($^1/_{500}$ s when using a Speedlight). Use high shutter speeds to freeze motion, low shutter speeds to suggest motion by blurring moving objects.

Aperture

Aperture can only be adjusted in **Manual** and **Aperture Priority** modes, when it can be set to values between maximum and minimum aperture (small apertures have high f-numbers, wide apertures low f-numbers; the actual apertures available depend on the lens used). Aperture can not be controlled from Nikon Capture when Custom Setting 22 (🔋 pg. 187) has been set to allow aperture to be adjusted manually using the lens aperture ring.

Exposure Comp.

Exposure compensation is useful when shooting subjects containing sharp lighting contrasts, or on other occasions when you want to modify the exposure value determined by the camera. Exposure compensation is available in all exposure modes.

Flexible Program

Flexible program can only be used in Program Mode, when it allows you to choose from predetermined combinations of shutter speed and aperture appropriate to current lighting conditions.

🔍 Bulb

At a setting of Bulb, the shutter remains while the shutter release button is held down. For this reason, although a setting of Bulb can be chosen remotely from Nikon Capture 2, you must use the shutter-release button on the camera to take photos at this setting. An error message will be displayed if you click either of the shoot buttons with the shutter speed set to Bulb.
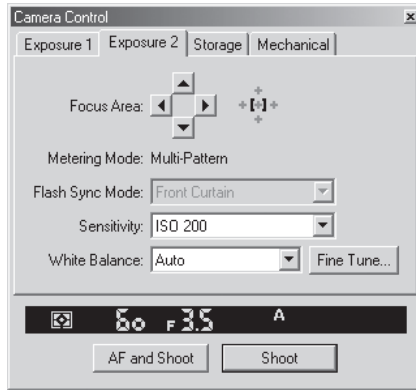
The following settings can be adjusted from the Exposure 2 tab:

Focus Area
The focus area can not be selected at an AF-area mode setting of closest subject priority. At other autofocus settings, the focus area can be selected using the arrow buttons. The effects of focus area selection depend on the option selected for **AF Area Mode** in the Mechanical tab (🔖 pg. 173).

Single Area AF:	The user selects that the camera will use to determine the autofocus target.
Dynamic Area AF:	The user selects the primary focus area. If the target moves, dynamic autofocus automatically shifts the focus area to track the subject, keeping it in focus. The plus pattern displayed to the right of the arrows indicates the active focus area.

Metering Mode

This text box shows the current metering mode. Note, however, that the metering mode can not be changed from Nikon Capture 2. The following three settings are available:

Multi-Pattern:	Metering is performed by a CCD sensor with 1,005 (67 vertical × 15 horizontal) metering pixels, which sets exposure using a selection of data from all areas of the frame. This system is particularly effective with brightly-colored (white or yellow) or dark-colored (black or dark green) subjects that occupy a substantial portion of the frame, producing photographs close to what is seen by the naked eye.
Center-Weighted:	The camera measures light in the entire frame, but assigns the greatest weight to a circular area in the center of the viewfinder. This setting can be used to preserve background details while letting lighting conditions at the center of the frame define exposure.
Spot:	The camera measures light only in a 4-mm (0.15″) circle centered on the current focus area. This setting is useful with backlit subjects or on other occasions when the background is much darker or much brighter than your subject.

Flash Sync Mode

When taking photographs with a Speedlight, you can choose a flash setting from the following options:

Front Curtain:	This mode is recommended in most situations. When using the SB-26, SB-25, or SB-24, set the sync-mode selector on the Speedlight to NORMAL.
Rear Curtain:	Use this mode to suggest motion by creating a stream of light that appears to follow moving objects. When this mode is combined with programmed auto or aperture-priority auto, shutter speed is slowed to achieve the same effect as slow sync. When using the SB-26, SB-25, or SB-24, set the Speedlight's sync mode selector to REAR.
Slow Sync:	A lower shutter speed is used in programmed auto and aperture-priority auto exposure modes to bring out background details.
Red Eye Reduction:	In this mode, a red-eye reduction pre-flash lights for approximately one second before the main flash, causing the pupils in your subjects' eyes to contract and reducing the "red-eye" effect a flash can sometimes cause (available only with SB-28DX, SB-28, SB-27, and SB-26).
Red Eye Slow:	This mode combines red-eye reduction with slow sync (available only with SB-28DX, SB-28, SB-27, and SB-26). Set the exposure mode to programmed auto or aperture-priority auto.

Sensitivity

Sensitivity (ISO equivalency) can be raised when taking photographs in low light conditions. The settings available for **Sensitivity** depend on the camera used (note that if sensitivity is raised using Custom Setting 31, sensitivity can not be changed from the **Sensitivity** menu):

- D1: 200–1600 (ISO equivalent) in steps of 1 EV
- D1x: 125–800 (ISO equivalent) in steps of $^1/_3$ EV
- D1H: 200–1600 (ISO equivalent) in steps of $^1/_3$ EV

Fixed White Balance

White balance is used to ensure that colors which appear white when viewed directly are white in the final photograph. The following settings are available:

Auto:	The camera sets white balance automatically.
Preset:	White balance can be set using a neutral gray or white object as a reference point. Depending on the camera, several preset white balance options may be available.
Direct sunlight:	Use this setting when taking photographs in direct sunlight.
Shade:	Use this setting when taking photographs in the shade in sunny weather.
Cloudy:	Use this setting when taking photographs under overcast skies.
Incandescent:	Use this setting when taking photographs indoors under incandescent light.
Fluorescent:	Use this setting when taking photographs indoors under fluorescent light.
Flash:	Use this setting with Nikon Speedlights.

White Balance

If desired, white balance can be used to produce an intentionally unbalanced rendering of a scene.

Fine Tune

Click **Fine Tune…** to make fine adjustments to the white balance settings chosen in the white-balance pop-up menu.
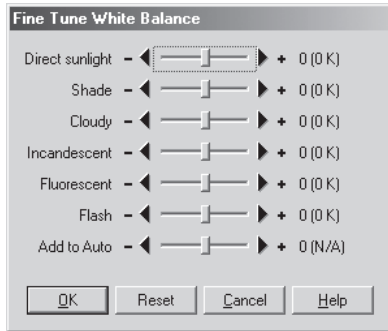
If the current white balance setting is **Auto**, the value selected with the **Add to Auto** slider in the Exposure 2 tab will be added to the white balance setting chosen by the camera.

Clicking the **Reset** button returns all values to defaults. Click **OK** to apply the current settings to the camera, or click **Cancel** to discard any changes and return to the Camera Control window.

Color Temperature

The color temperature will be displayed if **Show degrees Kelvin for White Balance** is selected in the Advanced Color tab of the Preferences dialog (pg. 199).
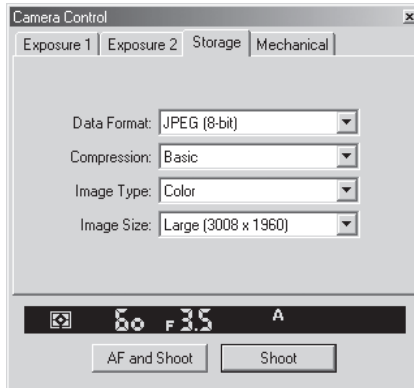
The following settings can be adjusted from the Storage tab:

Data Format
The following data formats are available: **RAW (12-bit)**, **TIFF-RGB (8-bit)**, **TIFF-YCbCr (8-bit)**, and **JPEG (8-bit)**. The data format setting determines pixel bit depth and file size.

Compression
When data format is set to **JPEG (8-bit)**, you can choose the image quality (JPEG compression) setting from **Fine**, **Normal**, and **Basic**. If you are using the D1x or D1ʜ with data format set to RAW (12-bit), you can choose from a settings of **None** or **Lossless**.

Image Type
Choose from **Color** and **Black & White**. **Black & White** is not available when **RAW** is selected for Data Format.

Image Size
If you are using the D1 or D1ʜ, image size will be fixed at **Large (2000 × 1312)**. At data format settings other than RAW, the D1x offers a choice of **Large (3008 × 1960)** and **Medium (2000 × 1312)**. When data format is set to **RAW (12-bit)**, image size for the D1x is fixed at **Large (3008 × 1960)**.

☑️ **Reducing File Size**

Uncompressed, full-sized images require a large amount of disk space. While file size can be reduced using compression, compressed images may show some loss in image quality.

Mechanical
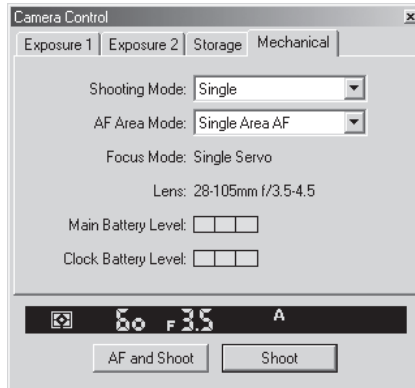
The following settings can be adjusted from the Mechanical tab:

Shooting Mode
Sets the shooting mode for PC mode to **Single** or **Continuous**. The advance rate for continuous mode can be set using Custom Setting 25 (📖 pg. 190). Changes to the shooting mode are reflected in Custom Setting 30.

AF Area Mode
The following options are available:

Single Area AF: The camera focuses on the subject in the area selected for autofocus. This mode is useful when focusing on subjects that are relatively stationary.

Dynamic Area AF: The camera first focuses on the subject in the area selected for autofocus. If the subject moves to another focus area, the camera will automatically shift the focus area to follow it (the focus area shown in the viewfinder will not, however, change). This makes it possible to focus on subjects that are moving irregularly.

Focus Mode

The current focus mode setting is displayed. This setting can not be changed from Nikon Capture 2.

Single Servo:	Focus locks when the camera shutter-release button is pressed halfway. The shutter can only be released when the in-focus indicator (●) appears in the simulated LCD panel in the Camera Control window or the camera viewfinder.
Continuous Servo:	The camera will focus continuously as long as the camera shutter-release button is held down. The shutter can be released even when the camera is not in focus.
Manual:	User adjusts focus manually. Shutter can be released even when the camera is not in focus.

Lens

Displays the focal length and maximum aperture of the lens currently attached to the camera. Depending on the lens type, some information may not be displayed.

Main Battery Level

Displays the level of the main camera battery. Green indicates that the battery has enough charge for continued operation. Yellow indicates that battery level is low; ready a fully charged spare battery pack. Red indicates that the battery is exhausted, and that no further photographs can be taken until the battery pack has been replaced. You may not be able to control the camera from Nikon Capture 2 when the battery is exhausted. Replace with a fully charged spare battery pack or use an EH-4 AC adapter (available separately).

Clock Battery Level

Displays the level of the camera clock battery. Should this display turn yellow or red, have the clock battery replaced by an authorized Nikon service representative (a fee is charged for this service).

Getting Good Results with Autofocus

Auto focus does not perform well when:
- The subject is very dark
- There is no contrast between the subject and the background
- The focus area contains objects at different distances from the camera
- The subject is dominated by regular geometric patterns

Saving and Loading Camera Control Settings

Nikon Capture 2 can be used to save Camera Control settings as well as to load and apply previously saved settings. Selecting **Camera Control** from the **Settings** menu displays the sub-menu of options described below.
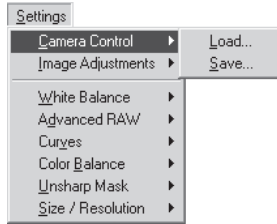
Load…:   Select this item to load camera settings previously saved using the **Save…** option (see below). A dialog will be displayed where you can navigate to the drive (volume) and directory containing the desired settings file (in the Windows version of Nikon Capture 2, only files with the extension ".ncc" will be displayed). The settings in the Camera Control window will instantly revert to the saved settings.

Save…:   Select this item to save the settings in the Camera Control window to a named file. These settings can later be recalled using the **Load…** option. Choosing **Save…** displays a dialog where you can choose a destination and file name for current camera settings (in the Windows version of Nikon Capture 2, camera settings are saved with the extension ".ncc").

Right-Button Menu (Windows)

In the Windows version of Nikon Capture 2, the **Camera Control** menu can be displayed by right-clicking in the Camera Control window.

Time Lapse Photography

Using Nikon Capture 2, you can take a series of photographs automatically at a time interval you select.

1 Select **Time Lapse Photography…** from the **Camera** menu.
The Time Lapse Photography dialog will be displayed.
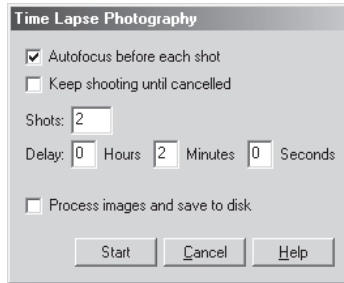
2 Adjust settings.
Before shooting starts, adjust the following settings:

Autofocus before each shot:
If this option is checked, the camera will perform an autofocus operation before each shot.

Keep shooting until cancelled:
If this option is checked, the camera will continue to take photographs until you click **Cancel**.

3 Choose the number of photographs to be taken.
Use the **Shots** box to choose a number of photographs from 2 to 9,999. This option is not available when **Keep shooting until cancelled** is selected.

4 Choose an interval setting.
The delay between shots can be set to any value between 00:00:01 (one second) and 99:59:59 (ninety-nine hours, fifty-nine minutes, and fifty-nine seconds).

5 Choose a destination and click start shooting.
To save photographs to disk as they are taken, check the **Process images and save to disk** option in the Time Lapse Photography dialog and click **Next**. The Batch dialog will be displayed; adjust set and click **OK** to begin time lapse photography. If **Process images and save to disk** is not selected, click time lapse photography. Images will be captured to the Camera Image window.

6 Follow the progress of time lapse photography in the progress dialog.

Click **Stop Shooting** to end time lapse photography at any time. If a number of shots was specified in the Time Lapse Photography dialog, shooting will end when the specified number of shots has been taken.
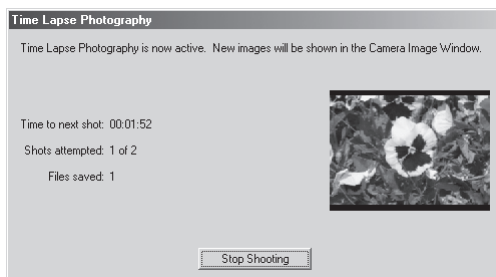
7 Close the Time Lapse Photography dialog.

Once the specified number of shots has been taken, click **Stop Shooting** button will change to **Shooting Complete**. Click **Shooting Complete** to exit the Time Lapse Photography dialog.

✔ Time Interval Settings

If the delay is shorter than the time required to record each photograph, the actual interval between photographs will be longer than that specified in the Time Lapse Photography dialog.

✔ Auto Off

When the camera is operated on battery power and **for 15 minutes** has been selected for "While application is running, keep camera awake" in the General tab of the Preferences dialog (🔋 pg. 195), choose a delay of fifteen minutes or less. When taking photographs at longer intervals, use an EH-4 AC adapter (available separately) to power the camera.

✎ During Time Lapse Photography

No other operations can be performed until the Time Lapse Photography dialog is closed.

🔍 Hard Disk Full

A warning will appear when space is no longer available on the destination disk for photographs taken using time lapse photography. Use the information in the warning to reduce the number of photographs or change the destination drive.

Custom Settings

Most of the custom settings stored in camera memory can be viewed and adjusted from the Custom Settings window in Nikon Capture 2. For more information on Custom Settings, see the documentation provided with your camera.

1 Select **Custom Settings…** from the **Camera** menu or click the 🖾 button.
The Custom Settings dialog will be displayed.
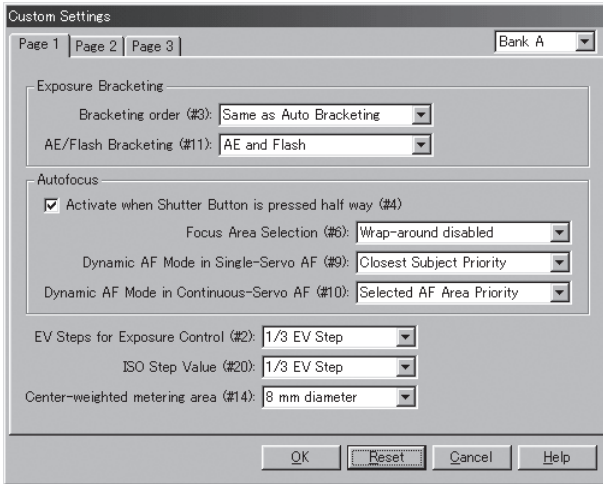
The Custom Settings dialog shows the Custom Settings currently in effect.

🔍 **Changes to Custom Settings**

Changes made to settings in the Custom Settings dialog are stored in the camera, not on the computer hard disk. This means that changing settings in the Custom Settings dialog has the same effect as changing Custom Settings using camera controls. The 🖾 button and the **Custom Settings…** option in the **View** menu are only available when a camera is connected to the computer.

2 Choose a Custom Settings bank.

Choose a Custom Settings bank (Custom Settings set) from the pop-up menu at the top right corner or the Custom Settings dialog.
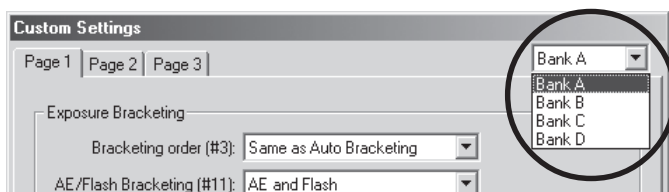
The banks available depend on the model of camera currently connected. When the D1 is connected, you have a choice of banks A or B; when the D1x or D1H is connected, banks A, B, C, or D can be selected.

3 Click **OK** to save changes to settings in the camera Custom Settings bank.

After making any adjustments to Custom Settings, click **OK** to save the changes in the camera Custom Settings bank and exit the Custom Settings dialog.

The pages that follow describe the Custom Settings available in each of the three tabs in the Custom Settings dialog. The Custom Settings number is given in parentheses. Depending on the model of camera connected, some Custom Settings may not be available (unless indicated otherwise, settings are available for all models of camera supported under Nikon Capture 2).

Custom Settings

Custom Settings can not be saved to a separate file. Clicking the **Reset** button resets all Custom Settings to their default values.

Settings That Can Not Be Adjusted from the Custom Settings Window

---

The Custom Settings listed below can not be adjusted in the Custom Settings window.
- Custom Setting 8 (mirror lock-up for CCD cleaning): can only be adjusted from the camera
- Custom Setting 28 (RAW (NEF) image save): if this option is set to "0" (off) when Nikon Capture is started, a message will be displayed. Clicking **OK** in this dialog sets Custom Setting 28 to "1" (uncompressed RAW image save enabled). Custom Setting 28 can only be returned to "0" from the camera.
- Custom Setting 30 (PC Shooting Mode): this option is adjusted from the Mechanical tab of the Camera Control window.

The Page 1 Tab

The items available in the Page 1 tab depend on the model of camera connected. When the D1 is connected, the following settings are displayed:
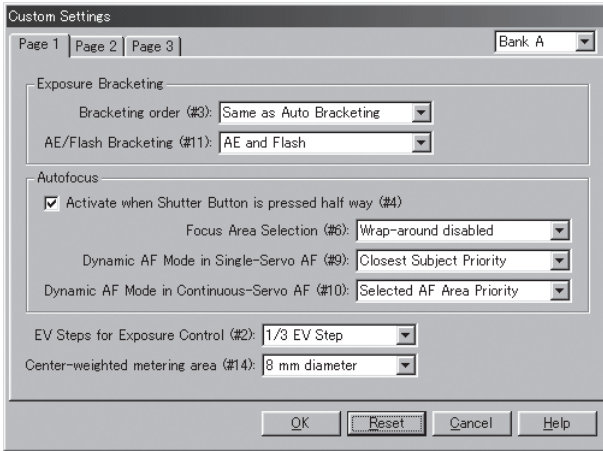
The following settings are displayed when the D1x or D1H is connected:
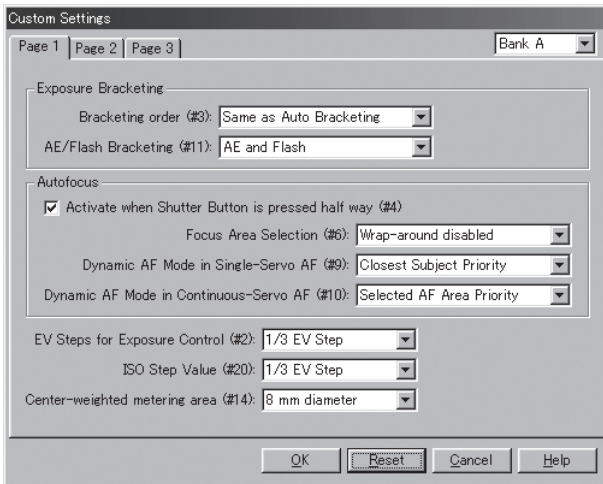
Exposure Bracketing

Bracketing Order (#3)

This setting controls the order in which shots are taken when exposure bracketing is used. The following options are available:

Same as Auto Bracketing (default):

Shots are taken in the order: no compensation, negative compensation (underexposure), positive compensation (overexposure).

Negative to Positive:

Shots are taken in the order: negative compensation (underexposure), no compensation, positive compensation (overexposure).

AE/Flash Bracketing (#11)

Use this item to select whether bracketing affects only autoexposure, only flash exposure, or both.

AE Only: Only autoexposure bracketing is performed.

Flash Only: Only flash exposure bracketing is performed.

AE and Flash (default):

Autoexposure bracketing and flash exposure bracketing are performed together.

Autofocus

Activate when Shutter Button is pressed half way (#4)

If this option is checked (default), autofocus is activated when the shutter-release button is pressed halfway. If this option is not checked, autofocus must be activated using one of the AF start (AF-ON) buttons on the camera.

Focus Area Selection (#6)

This setting controls AF area selection. The following options are available:

Wrap-around disabled (default):

The focus area display is bounded by the four outer focus areas, so that, for example, pressing the focus selector up when the top focus area is already selected will have no effect.

Wrap-around in effect:

The focus area "wraps around" from top to bottom and right to left. Pressing the focus selector up when the top focus area is highlighted selects the bottom focus area. Similarly, pressing the selector to the right when the right area is highlighted selects the left focus area.

Dynamic AF Mode in Single-Servo AF (#9)

These options are used to disable or enable closest-subject priority when dynamic AF is used with single-servo autofocus.

Selected AF Area Priority:

Closest subject priority disabled.

Closest Subject Priority (default):

Closest subject priority enabled. When closest subject priority is enabled, the camera assesses the distance to the subjects in each focus area and automatically selects the subject closest to the camera.

Dynamic AF Mode in Continuous Servo AF (#10)

These options are used to enable or disable closest-subject priority when dynamic AF is used with continuous-servo autofocus.

Selected AF Area Priority (default):

Closest subject priority disabled.

Closest Subject Priority:

Closest subject priority enabled. When closest subject priority is enabled, the camera assesses the distance to the subjects in each focus area and automatically selects the subject closest to the camera.

EV Steps for Exposure Control (#2)

Sets the size of the increment for adjusting aperture, shutter speed, exposure compensation, and auto bracketing.

1/3 EV Step (default): Adjustments to exposure settings are made in increments of $^1/_3$ EV.

1/2 EV Step: Adjustments to exposure settings are made in increments of $^1/_2$ EV.

1 EV Step: Adjustments to exposure settings are made in increments of 1 EV.

ISO Step Value (#20) (D1x and D1h only)

Sets the size of the increment for adjusting sensitivity (ISO equivalency).

1/3 EV Step (default): Adjustments to sensitivity are made in increments equivalent to $^1/_3$ EV.

1/2 EV Step: Adjustments to sensitivity are made in increments equivalent to $^1/_2$ EV.

1 EV Step: Adjustments to sensitivity are made in increments equivalent to 1 EV.

Center-weighted metering area (#14)

The diameter of the area assigned the greatest weight in center-weighted metering can be set to 6 mm, 8 mm, 10 mm, 13 mm, or to the average of the entire frame.

The Page 2 Tab

The items available in the Page 2 tab depend on the model of camera connected. When the D1 is connected, the following settings are displayed:
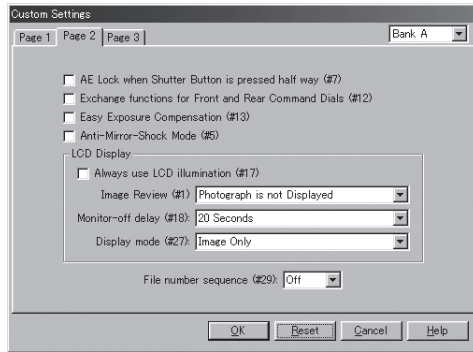
The following settings are displayed when the D1x is connected:
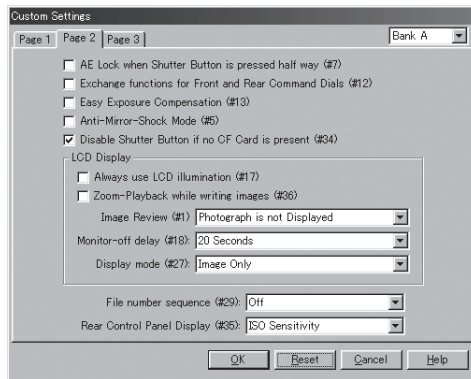
The following settings are displayed when the D1H is connected:
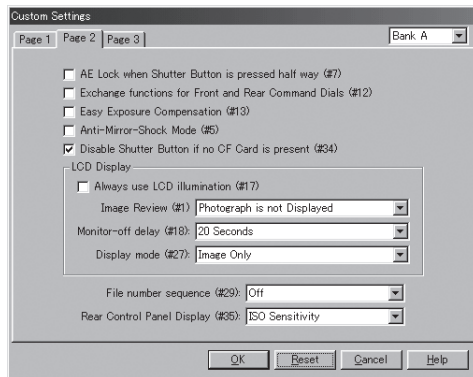
AE Lock when Shutter Button is pressed half way (#7)
When this item is checked, exposure is locked while the shutter-release button is pressed halfway. If it is not checked (the default setting), the AE-L/AF-L button on the camera must be pressed to lock exposure.

Exchange functions for Front and Rear Command Dials (#12)
If this option is checked, the functions of the main- and sub-command dials are reversed. Default is off.

Easy Exposure Compensation (#13)
If this option is checked, exposure compensation can be set by turning the sub-command dial (programmed auto or shutter-priority auto) or main command dial (aperture-priority auto or manual). If the roles of the main command and sub-command dials are switched using Custom Setting 12, exposure compensation will be assigned to the sub-command dial in programmed auto, aperture-priority auto, and manual modes, and to the main command dial in shutter- priority auto. If this option is not checked, exposure compensation can be set by pressing the exposure compensation button on the camera while rotating the main command dial. Default is off.

Anti-Mirror-Shock Mode (#5)
If this option is checked, the shutter will release slightly after the shutter-release button has been pressed, minimizing camera shake. Default is off.

Disable Shutter Button if no CF Card present (#34) (D1x and D1h only)
If this option is checked, the shutter can not be released when no memory card is inserted in the camera.

LCD Display
Always use LCD illumination (#17)
When this item is checked, the LCD illuminators (backlights) will light when any button is pressed. By default, the LCD illuminators are controlled by the camera power switch.

Zoom-Playback while writing images (#36) (D1x only)
Checking this option allows you to zoom in on images that are displayed in the monitor as they are being recorded to the memory card.

Assign Command Dial

The functions of the command dials in programmed auto are not affected by Custom Setting 12.

Image Review (#1)

This setting controls whether photographs are displayed in the monitor after they are taken. The D1×
and D1ʜ normally only display photographs when the monitor button is pressed; if desired, however,
this setting can be used to display photographs automatically as they are recorded to the memory card.
The D1 can be set to display images taken in single-frame or self-timer modes in the monitor before
they are saved to the memory card, allowing the user to decide whether or not to save the image to the
memory card, or to display images as they are saved to the memory card.

>   **Photograph is not Displayed** (default):
>
>   Photographs are not displayed in the monitor after they are taken.
>
>   **Capture-Preview mode** (D1 only):
>
>   Photograph is displayed in the monitor before being saved to the memory card.
>
>   **Record and Review mode**:
>
>   Photograph is displayed in the monitor while being saved to the memory card.

Monitor-off Delay (#18)

This setting determines the length of time the camera monitor will remain on when no operations are
performed. The limit for display can be set to 10 seconds (D1× and D1ʜ only), 20 seconds (default), 1
minute, 5 minutes, or 10 minutes.

Display mode (#27)

This setting allows the user to determine what information is available when images are played back.
The user can opt to include a histogram and/or highlight point display in playback photo information
display. For details, see the documentation provided with your camera.

File number sequence (#29)

When auto file numbering is turned on, the camera assigns all subsequent folder and file numbers sequentially in ascending order,. If the memory card is formatted or a new card inserted, folder and file numbering will continue from the last numbers used. This makes it easier to keep track of photographs and helps prevent files and folders from being accidentally overwritten when copied to a computer. If auto file numbering is turned off, the camera will no longer store the last folder and file numbers used.

Off (default): Normal file name assignment.

On: Sequential file name assignment.

Rear Control Panel Display (#35) (D1x and D1h only)

This setting determines whether the display in the rear control panel shows the current sensitivity (ISO equivalency) setting or the number of exposures remaining.

ISO sensitivity (default):
Rear control panel shows the current sensitivity setting.

Remaining Frame Count:
Rear control panel shows the number of exposures remaining.

The Page 3 Tab

The items available in the Page 3 tab depend on the model of camera connected. When the D1 is connected, the following settings are displayed:
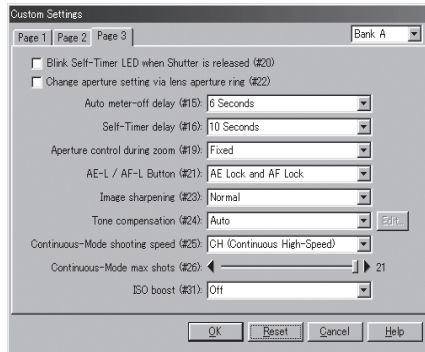
The following settings are displayed when the D1x or D1H is connected:
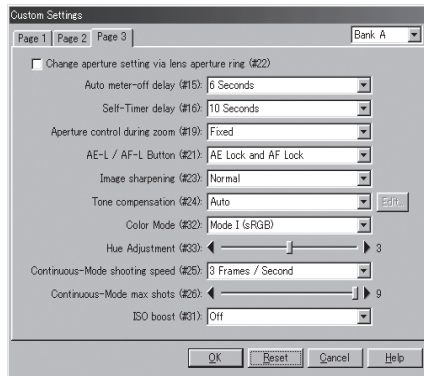
Blink Self-Timer LED when Shutter is released (#20) (D1 only)
When this item is checked, the self-timer lamp blinks once to confirm shutter released. Default is off.

Change aperture setting via lens aperture ring (#22)
If this option is checked, aperture can only be set using the lens aperture ring.

🔍 Aperture Setting

When Aperture Setting is checked, aperture is shown in increments of one step and aperture can only be adjusted using the aperture ring, regardless of the command-dial assignment chosen in Custom Setting 12.

Auto meter-off delay (#15)
This setting allows the user to determine the duration of time that the camera meters remain on after you take your finger off the shutter-release button. Auto meter switch-off can be set to four, six, eight, or sixteen seconds (note that longer times shorten battery life). The default is six seconds.

Self-Timer delay (#16)
This setting allows the user to determine the delay between your pressing shutter-release button and the shutter being released in self-timer mode. Delay can be set to two, five, ten, or twenty seconds. The default is ten seconds.

Aperture control during zoom (#19)
On lenses with a variable focal length (for example, Micro Nikkor or zoom lenses), maximum aperture varies with focal length. This setting determines how such changes in the maximum aperture affect the f/-number specified by the user in aperture-priority auto or manual exposure modes. By default, aperture remains fixed at the specified f/-number while the lens is zoomed in or out. If desired, the camera can instead be set to vary the f/-number with focal length so that aperture remains a fixed number of steps from the maximum setting. Suppose, for example, that a 70–210 mm, f/4–5.6 AF Zoom-Nikkor lens is mounted on the camera, and an aperture of f/8 is selected when the lens is zoomed out to 70 mm. At this zoom position, f/8 is two steps from the maximum aperture of f/4. Now imagine that the lens is zoomed out to 210 mm. If fixed aperture is selected, aperture will remain constant at f/8. If aperture is set to vary with focal length, however, aperture will decrease to f/11, two steps from f/5.6, the maximum value for this focal length.

Fixed (default):
Aperture does not vary with focal length.

Variable: Aperture varies with focal length.

AE-L/AF-L Button (#21)
This option determines the functions performed by the AE-L/AF-L button.

AE Lock and AF Lock (default):
Both auto exposure and autofocus are locked while the AE-L/AF-L button is pressed.

AE Lock Only:
Only auto exposure is locked while the AE-L/AF-L button is pressed.

AF Lock Only:
Only autofocus is locked while the AE-L/AF-L button is pressed.

AE Lock and Hold:
Auto exposure is locked when the AE-L/AF-L button is pressed, and remains locked until the button is pressed a second time.

Image sharpening (#23)

This setting controls the amount of sharpening performed by the camera to make edges more distinct. Sharpening can be turned off or set to None, Low, Normal (the default value), or High.

Tone compensation (#24)

The user can choose from Auto (the default value), Normal, Less Contrast, More Contrast, or User-Defined Custom Curve.

Edit Camera Curves

When User-Defined Custom Curve is chosen for **Tone Compensation**, the user can create a custom tone curve in the Edit Camera Curves dialog and download it to the camera.
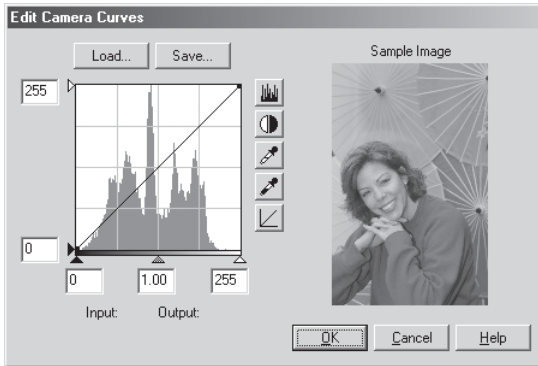
To create a custom curve, click the **Edit...** (Windows) or **Choose...** button (Macintosh). The Edit Camera Curves window will be displayed.

The controls in the Edit Camera Curves window are identical to those in the Curves window, except in the following respects: (1) only the master channel, not individual RGB channels, may be edited; (2) there is a limit of 20 spline points; (3) the midpoint may not be edited; (4) a user-defined sample image can be displayed.

The upper left section of the Edit Camera Curves window contains **Load...** and **Save...** buttons. By clicking the **Load...** button, previously stored curves, with less than 20 spline points, can be selected via the "Open" dialog (if the selected file has more than 20 spline points, a warning will be displayed, and no file will be loaded). In Windows, look for files with the ".ncv" extension.

The **Save...** button opens the "Save As" dialog, where you can save the current curve.

Color Mode (#32) (D1x and D1H only)
The color mode can be chosen from **Mode I (sRGB)** and **Mode II (Adobe RGB)**.

Hue Adjustment (#33) (D1x and D1H only)
Drag the slider to adjust hue. Values for hue adjustment range from zero to six, with three being the default value. Raising hue adjustment above three will introduce a yellow cast, while values below three will introduce a blue cast.

Continuous-Mode shooting speed (#25)
This setting sets the rate at which photographs are taken in continuous mode. The options available depend on the camera model. The D1 offers settings of continuous low speed (CL, where each photograph is saved to the memory card before the next photograph is recorded), one, two, three, or four frames per second and a default setting of continuous high speed (CH; about 4.5 frames per second). The D1x offers settings of one, two, and three frames per second (default three frames per second), the D1H settings of one, two, three, or four frames per second and a default setting of continuous high speed (CH, about 4.5 frames per second).

Continuous-Mode max shots (#26)
This setting limits the number of frames that can be taken in a single sequence in continuous mode. The range of values available depends on the camera model. The maximum for the D1 can be set to any value between one and twenty-one (or between one and ten in RAW mode), the maximum for the D1x to any value between one and nine (one to six in RAW mode), and the maximum for the D1н to any value between one and forty (one to twenty-seven in RAW mode).

ISO boost (#31)
This setting is used to raise sensitivity (ISO equivalency) one or two steps above the maximum setting. Sensitivity boost can be used to obtain higher shutter speeds at night-time sporting events, for example, or to prevent underexposure when photographing poorly-lit subjects. Note, however, that sensitivity boost increases the amount of "noise" (a mottling effect similar to the effects of film grain in high-speed film) that appears in the final photograph. The options available depend on the camera model:

D1/D1н
- **Off**: ISO boost off; sensitivity can be adjusted normally.
- **1 step over 1600**: Sensitivity raised roughly one step (1 EV) over ISO 1600 equivalent. Rear control panel shows **HI-1**.
- **2 steps over 1600**: Sensitivity raised roughly two steps (2 EV) over ISO 1600 equivalent. Rear control panel shows **HI-2**.

D1x
- **Off**: ISO boost off; sensitivity can be adjusted normally.
- **1 step over 800**: Sensitivity raised roughly one step (1 EV) over ISO 800 equivalent. Rear control panel shows **HI-1**.
- **2 steps over 800**: Sensitivity raised roughly two steps (2 EV) over ISO 800 equivalent. Rear control panel shows **HI-2**.

Preferences

This chapter describes the options available in the Preferences dialog.

To view the Preferences dialog, select **Preferences…** from the **File** (Windows) or **Edit** (Macintosh) menu. The Preferences dialog contains the following six tabs:

Tab	Function	👁
General	Adjust image window display settings and specify the default image enhancement options that will apply to newly captured images.	pp. 195-196
File Locations	Specify the location of the folders used for temporary storage and choose the application that will be used to open saved images.	pg. 197
Thumbnails	Options for deleting the images in the thumbnails folder.	pg. 198
Advanced Color	Set the defaults for the white and black points in the Curves window.	pg. 199
Grid Lines	Specify the spacing and color of the grid displayed in the Preview section or in image windows.	pg. 200
CMS	Select the color profiles used by the Nikon Color Management System (CMS).	pg. 201

🔘 Viewing Preferences

To view settings in any of the six panes, click the appropriate tab.

Tab ——— **Preferences**
General | File Locations | Thumbnails | Advanced Color | Grid Lines | CMS
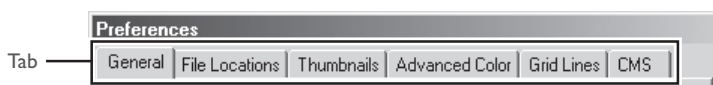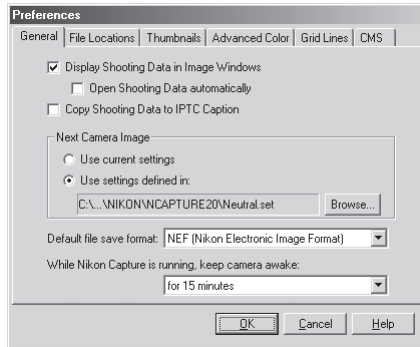
The General Tab

The General tab contains the following items:

Display Shooting Data in Image Windows
When this box is checked, the Shooting Data section will be displayed.

Open Shooting Data automatically
If the **Display Shooting Data in Image Windows** option is checked, you can choose whether the Shooting Data section will be opened automatically when the Camera Image window or a new image window is opened.

Copy Shooting Data to IPTC Caption
Check this item to automatically copy photo information to the caption area of the IPTC record in file formats that support this option.

Next Camera Image
Choose the settings (Curves, Color Balance, Unsharp Mask, crop size and location, and output size and resolution) that will apply to the next image captured from the camera.

>   **Use current settings**:
>   The settings now in effect are applied to the next image.
>   **Use settings defined in**:
>   The settings in the selected file are applied to the next image. To select new default settings, click **Browse…**.

Default file save format

Select the default file format for images saved using the **Save as…** option. The following options are available: Current file format, NEF (Nikon Electronic Image Format), JPEG (EXIF Compliant), JPEG (JFIF Compliant), TIFF (RGB), TIFF (CMYK), BMP (Windows version only), PICT (Macintosh version only).

While Nikon Capture is running, keep camera awake:

Set the length of time before exposure meters turn off automatically when the camera is running on battery power. This setting only takes effect when the camera is connected and powered on, and only when the camera is operating on battery power. This setting takes precedence over option chosen in Custom Setting 15.

for 15 minutes:	The time before exposure meters turn off automatically is set to fifteen minutes.
Always:	The camera stays awake indefinitely.

When powered by an EH-4 AC adapter (available separately), the camera stays awake indefinitely, regardless of the setting chosen using the above option.

✅ **Current file format**

When this option is selected, the default file format is whatever format is currently selected in the Save As dialog. When an image created with the **Create Copy** option is saved for the first time, however, the last file format chosen is used.

The File Locations Tab
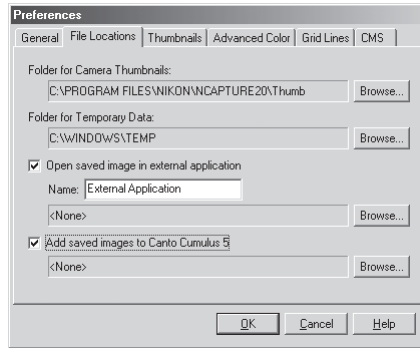
The File Locations tab contains the following items:

Folder for Camera Thumbnails:
Specify the folder in which image and other data used in the Camera Image window will be stored. The default folder is the "Thumb" folder in the directory to which Nikon Capture was installed. To choose a different folder, click the **Browse…** button and navigate to the desired location.

Folder for Temporary Data:
Specify the folder or volume in which temporary data, such as image cache data, will be stored. The default folder for Windows is the "TEMP" folder in the Windows directory, while the default volume for the Macintosh is the start-up disk. To choose a different folder in the Windows version of the program, click the **Browse…** button and navigate to the desired location. In the Macintosh version, a new volume can be chosen from the pop-up menu.

Open saved image in external application
If this option is checked and you attempt to use Nikon Capture 2 to open images saved in TIFF, JPEG, BMP, or PICT formats, the images will instead be opened in a specified third-party application. Images will also automatically be opened in the specified application when saved in any of these formats with the **Open in External Application** option checked (pg. 91). To specify the application used, check this option and enter the desired file name and path (twenty-five characters or less), or click the **Browse…** button to navigate to the desired application.

Add saved images to Canto Cumulus 5
When this item is checked, images will automatically be catalogued in a Canto Cumulus 5 catalog file as they are saved. To choose a catalog file, click the **Browse…** button and navigate to the desired file. Canto Cumulus 5 must be installed for this option to take effect.

The Thumbnails Tab
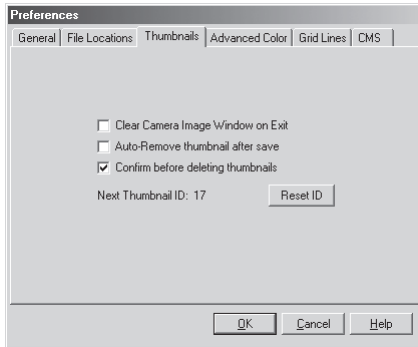
The Thumbnails tab offers a choice of settings for the Thumbnails section in the Camera Image window.

Clear Camera Image Window on Exit
Controls whether thumbnails will be removed from the Thumbnails section when you exit Nikon Capture. If this box is checked, a confirmation dialog will be displayed on exit (no dialog will be displayed if there are no thumbnails in the Camera Image window). If this box is not checked, thumbnails will be saved, to be displayed in the Thumbnails section when you next start Nikon Capture 2.

Auto-Remove thumbnail after save
Controls whether the associated thumbnail preview will automatically be removed from the Thumbnails section when an image is saved.

Confirm before deleting thumbnails
Check this option to have Nikon Capture 2 display a warning dialog before deleting a captured image that has not been saved.

Next Thumbnail ID:
Displays the ID that will be used for the next thumbnail loaded into the Camera Image window.

Reset ID
Click this button to reset the thumbnail ID for the next thumbnail loaded into the Camera Image window to one (1).

The Advanced Color Tab
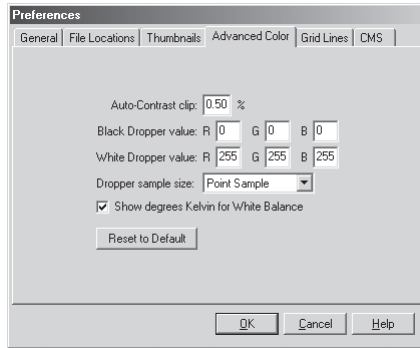
The Advanced Color tab offers the following options:

Auto-Contrast clip:
Controls how the auto contrast operation calculates the input values for the white point and black point. By default, the white point is set to a value that excludes 0.50% of the brightest pixels in the current crop, the black point to a value that excludes 0.50% of the darkest pixels in the crop. This produces an optimal dynamic range, with minimum loss of detail in shadows and highlights. To preserve detail at the expense of dynamic range, lower the "excluded" value for auto contrast (a value of 0 will set the black and white points respectively to the darkest and brightest pixel in the crop). To increase the dynamic range at the expense of detail, raise the "excluded" value.

Black Dropper value/White Dropper value:
Controls the default output values for white point and black point. Output for each channel can be set to a value between zero and 255; these settings can also be adjusted in the Curves window. By default, output levels for the white point are 255 for each channel, which displays as white on most computer monitors. The defaults for the black point are 0 for each channel, which displays as black.

Dropper sample size:
This setting determines the size of the area sampled with the eyedropper cursor. You can select a sample sizes of Point Sample (the default setting), 3×3 Average, and 5×5 Average. When the sample size is set to 3×3 or 5×5 Average, the average for the pixels sampled is used. Choosing a large sample size reduces precision, but also minimizes the effects of noise; choosing a small sample size has the opposite effect.

Show degrees Kelvin for White Balance
When this option is checked, the color temperature is displayed in the White Balance and Fine Tune White Balance windows.

Reset to Default
Click this button to restore settings in the Advanced Color tab to their default values.
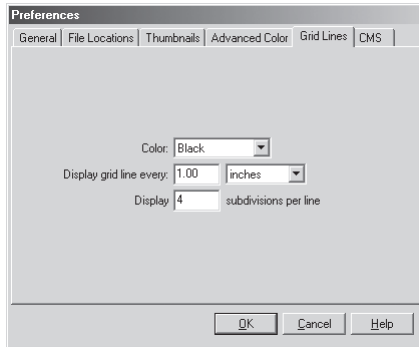
The Grid Lines tab controls the color and spacing of the non-printing grid lines overlaid on an image when **Show Grid Lines** is selected from the **Image** menu.

Color:
The color of the grid lines can be selected from white, light gray, dark gray, black, red, green, blue, cyan, magenta, and yellow.

Display grid line every:
Enter a value for grid spacing in the text box. The units for the grid can be selected from the pop-up menu to the right of the text box. The options available are pixels, inches, millimeters, centimeters, picas, and points; at settings other than pixels grid spacing can be entered up to two decimal points.

Display n subdivisions per line
The number of subdivisions into which each grid cell will be divided. The main grid is displayed as solid lines of the color specified using the Color option, the subgrid as broken lines of the same color.

The CMS Tab
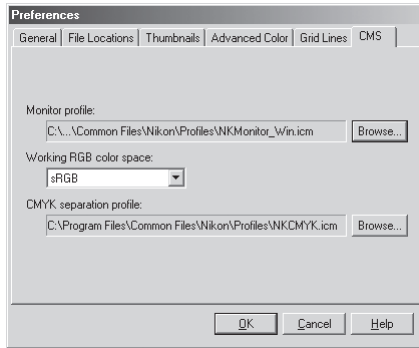
The CMS tab is where you specify the color management profiles used for displaying images on your monitor, editing and saving RGB images, and saving and printing CMYK images.

Monitor profile
The ICC monitor profile used to adjust the display for the non-linear characteristics of your monitor is displayed here. To choose a different profile, click the **Browse…** button and navigate to the desired location.

Working RGB color space
The RGB color-space profile used for output when an image is saved can be selected from sRGB, Bruce RGB, NTSC (1953), Adobe RGB (1998), CIE RGB, Wide Gamut RGB, Apple RGB, and Color Match RGB.

CMYK separation profile
The profile used when converting RGB images to CMYK is displayed here. To choose a different profile, click the **Browse…** button and navigate to the desired location.

RGB Color-Space Profiles

See page 220 for more information on the standard color-space profiles supported under Nikon Capture 2.

Supported Color Profiles

Nikon Capture 2 supports only ICC (International Color Consortium) monitor and CMYK profiles. Particular care should be exercised when choosing a CMYK profile, as the profile supplied by the manufacturer of your output device may not be an ICC profile.

Reference

This chapter describes the options available in the menus, toolbar (Windows), and tool palette (Macintosh).

Menu Commands

The File Menu

The **File** menu contains the following options:
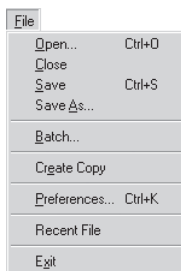
Windows	Macintosh

Open…
Images saved in Nikon Capture's Nikon Electronic Image Format (NEF) can be opened and viewed. Unedited images taken by the camera in JPEG and TIFF formats can also be opened.

Close
Closes the active window.

Save
Saves the selected image. Images saved in a format other than NEF can not be opened again in Nikon Capture 2.

Save As…
Use this option to saves the selected image in NEF format or a format that can be read by third-party applications such as Adobe Photoshop (TIFF, JPEG, etc.). Images saved in a format other than NEF can not be opened again in Nikon Capture 2.

Batch…
Displays the Batch dialog. Images will be processed automatically according to user-specified settings. See "Batch Processing" (🔆 pg. 131) for more information.

Create Copy
A copy of the image selected in the Camera Image window or, if an image window is active, of the image in the active image window will appear in a new image window.

Preferences… (Windows only)
The Preferences dialog will open, where you can make adjustments to preferences. See "Preferences" for details (🔆 pg. 193).

Recent File (Windows only)
Recent files will be listed in the order opened.

Exit (Windows)/
Quit (Macintosh) Quit Nikon Capture.

The Edit Menu

The **Edit** menu contains the following options:
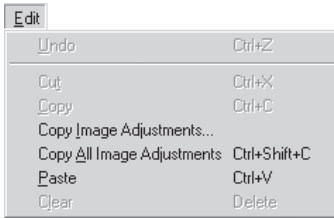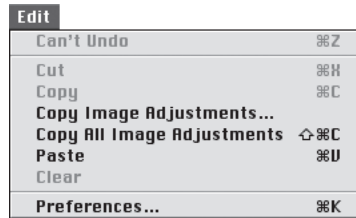
| Windows | Macintosh |

Undo/Cut/Copy　　These commands can not be used in Nikon Capture 2.

Copy Image Adjustments…

You can select which groups of settings you would like to copy to the clipboard. Click on the **Copy** button after selecting White Balance, Advanced RAW, Curves, Color Adjustment, Unsharp Mask and/or Size/Resolution.
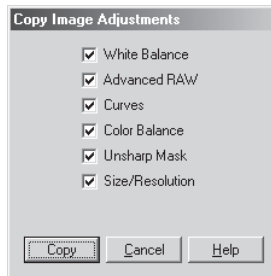
Copy All Image Adjustments

Copies all settings to the clipboard.

Paste　　Applies the copied settings to the image in the active window.

Clear　　This command can not be used in Nikon Capture 2.

Preferences… (Macintosh only)

The Preferences dialog will open, where you can make adjustments to preferences. See "Preferences" for details (<img> pg. 193).

The View Menu

The **View** menu contains the following options:

Windows   Macintosh

View Entire Image   Nikon Capture 2 adjusts the magnification of the image to fit the active window.

Fit Window to Image   Nikon Capture 2 adjusts the size of the active window to fit the image.

Auto Fit Window to Image

When this option is checked, the active window will automatically be adjusted to fit the image after any zoom or rotate operations.

Selection Cursor   When this option is checked, the cursor becomes a +, allowing you to select a portion of the image in the active window.

Zoom Cursor   When this option is checked, the cursor becomes a 🔍, allowing you to zoom in on a portion of the image in the active window. To zoom out, hold down the Ctrl (Windows) or option (Macintosh) key while clicking in the active window.

Grab Cursor   When this option is checked, the cursor becomes a 🖐, allowing you to scroll the image in the active window to view another area of the image. This function performs much the same function as scrolling the window, although with slightly more control.

Zoom In	Select this option to zoom in on the image in the active window.
Zoom Out	Select this option to zoom out from the image in the active window.
Camera Image	When Camera Image is checked, the Camera Image window will be displayed.
Shooting Data Section	When this option is checked, the Shooting Data section is displayed in the active window.
Thumbnails Section	When this option is checked, the Thumbnails section is displayed in the Camera Image window.
Camera Control	Selecting this option opens the Camera Control window, where you can make changes to camera settings and take photos.
Image Adjustment Control Panel	When this options is checked, the Image Adjustment Control Panel is displayed.
White Balance	When this options is checked, the White Balance window is displayed.
Advanced RAW	When this options is checked, the Advanced RAW window is displayed.
Curves	When this option is checked, the Curves window is displayed.
Color Balance	When this option is checked, the Color Balance window is displayed.
Unsharp Mask	When this option is checked, the Unsharp Mask window is displayed.
Size/Resolution	When this option is checked, the Size/Resolution window is displayed.
Bird's Eye	When this option is checked, the Bird's Eye window is displayed.
Information	Check this option to display the Information window.
Toolbar/ **Tool Palette**	Check this option to display the toolbar (Windows) or tool palette (Macintosh).
Status Bar (Windows only)	Check this option to display the status bar at the bottom of the Nikon Capture 2 window.

The Image Menu

The **Image** menu contains the following options:
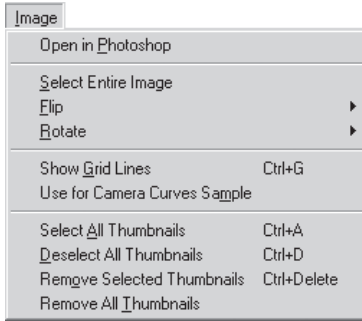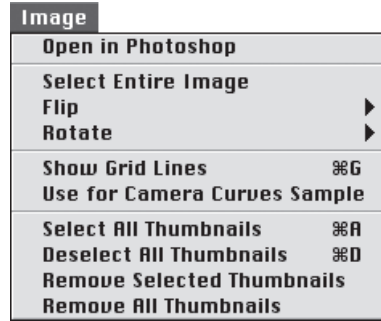
Windows   Macintosh

Open in Photoshop   Selected image opened in Adobe Photoshop. Image adjustment settings in Nikon Capture 2 are applied to the image before it is passed to Adobe Photoshop. Note that this option requires that Adobe Photoshop version 5.5 or later be installed on your computer.

Select Entire Image   Selects entire image.

Flip   When you click on this item, a submenu appears giving you the choice of flipping the image currently visible in the active window horizontally or vertically.

Rotate   When you click on this item, a submenu appears giving you the choice of rotating the image in the active window 180°, 90° clockwise or 90° counterclockwise.

Show Grid Lines   When this option is selected, a non-printing grid becomes visible over the image in the active window. Grid Line settings can be adjusted from the Preference window's Grid Lines tab.

Use for Camera Curves Sample

Select the current thumbnail as the sample image for the Edit Camera Curves window in the Custom Settings dialog. Note that only RAW images can be used.

Select All Thumbnails   Highlights all thumbnails in the Thumbnails section.

Deselect All Thumbnails

Removes highlights from all thumbnails in the Thumbnails section.

Remove Selected Thumbnails

Deletes the thumbnails selected in the Camera Image window.

Remove All Thumbnails

Deletes all images in the Camera Image window.

The Camera Menu

The **Camera** menu contains the following options:
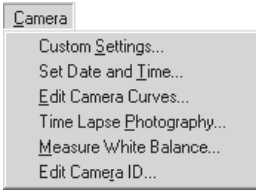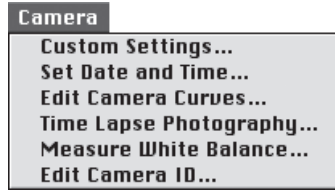
Windows   Macintosh

Custom Settings…   Opens the Custom Settings window, where you can adjust Custom Settings and apply them directly to the camera (👁 pg. 178).

Set Date and Time…   The following dialog will open, where you can set the camera's internal clock calendar to the current date and time. To view the date and time settings in effect in the camera, click **Use Current Date/Time**. Click **OK** to put any changes to the date and time into effect.
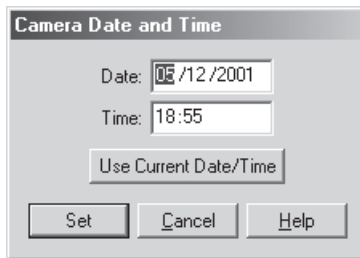
Edit Camera Curves… Opens the Edit Camera Curves dialog, where you can edit the curve used when "User-Defined Custom Curve" is selected for Custom Setting 24 (👁 pg. 189).

Time Lapse Photography…

Use this option to program the camera to take a series of photos at pre-specified intervals (👁 pg. 176).

Measure White Balance…

Use this option to measure white balance for the preset white-balance option in the camera's white balance menu. If the camera supports multiple preset white-balance settings, the setting that will be used to store the measured value can be selected from the pop-up menu at the top of the dialog. After selecting a white-balance setting (if applicable), click **OK** to measure white balance. For more information, see the camera User's Manual.

D1

D1x, D1н
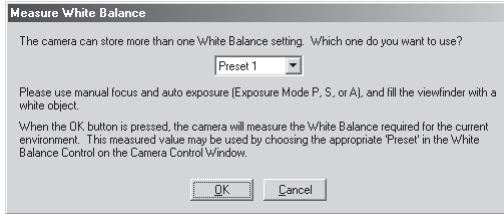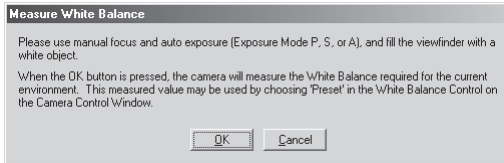
Edit Camera ID…
So that your computer will recognize and remember the camera when it is attached, you can use the following dialog to give your camera a name up to thirty-eight characters in length.
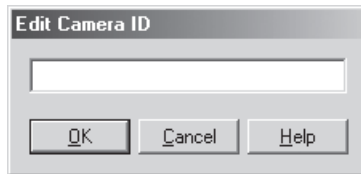
📷 **The Camera Menu**

The **Camera** menu is only available when a camera is connected.

The Settings Menu

The **Settings** menu contains the following options:
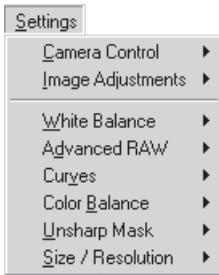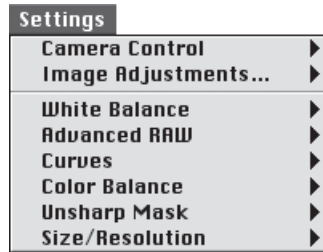
Windows   Macintosh

Camera Control   The **Camera Control** menu is used to save and load the settings in the
                        Camera Control window. Select **Save…** to save the current settings to a
                        named file, **Load…** to load settings from a selected file and apply them to the
                        Camera Control window (🐢 pg. 175).

Image Adjustments   The **Image Adjustments** submenu is used to save and load the settings in
                        the Image Adjustment Control Panel window. Select **Save…** to save the cur-
                        rent settings to a named joint settings file, **Load…** to load settings from a
                        selected file and apply them to the Image Adjustment Control Panel window
                        (🐢 pg. 96).

White Balance   The **White Balance** menu is used to save, load, or reset the settings in the
                        White Balance window. Select **Save…** to save the current settings to a named
                        file, **Load…** to load settings from a selected file and apply them to the White
                        Balance window. Select **Reset to Recorded Value** to restore the white
                        balance setting in effect at the time the photograph was taken (🐢 pg. 102).

Advanced RAW The **Advanced RAW** menu is used to save, load, or reset the settings in the Advanced RAW window. Select **Save…** to save the current settings to a named file, **Load…** to load settings from a selected file and apply them to the Advanced RAW window. Select **Reset to Neutral** to restore the settings in effect at the time the photograph was taken (🐌 pg. 106).

Curves The **Curves** menu is used to save, load, or reset the settings in the Curves window. Select **Save…** to save the current settings to a named file, **Load…** to load settings from a selected file and apply them to the Curves window. Select **Reset to Neutral** to return all tone curves to linear (🐌 117).

Color Balance The **Color Balance** menu is used to save, load, or reset the settings in the Color Balance window. Select **Save…** to save the current settings to a named file, **Load…** to load settings from a selected file and apply them to the Color Balance window. Select **Reset to Neutral** to return settings for brightness, contrast, and color balance to zero (🐌 pg. 121).

Unsharp Mask The **Unsharp Mask** menu is used to save, load, or reset the settings in the Unsharp Mask window. Select **Save…** to save the current settings to a named file, **Load…** to load settings from a selected file and apply them to the Unsharp Mask window. Select **Reset to Neutral** to delete all existing Unsharp Masks (🐌 pg. 125).

Size/Resolution The **Size/Resolution** menu is used to save, load, or reset the settings in the Size/Resolution window. Select **Save…** to save the current settings to a named file, **Load…** to load settings from a selected file and apply them to the Size/Resolution window. Select **Reset to 100%** to enlarge the crop to select the entire image and set the scale to 100% (🐌 pg. 129).

🔍 **Right-Button Menus (Windows)**

In the Windows version of Nikon Capture 2, the settings menu for a given window can be displayed by right-clicking anywhere in the menu.

The Window Menu

The **Window** menu contains the following options:
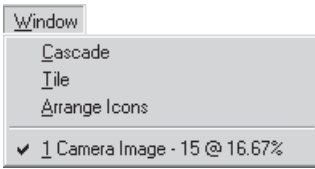
Windows   Macintosh

Cascade/Stack   Arranges the Camera Image window and image windows so that they overlap.

Tile (Windows only)   Arranges the Camera Image window and image windows so that they do not overlap.

Arrange Icons (Windows only)
                           If the Camera Image window or any image windows have been reduced to icons, this command will arrange the icons along the bottom of the Nikon Capture 2 window.

Open Windows   A list of the windows currently open in Nikon Capture 2 is displayed at end of the **Window** menu.

The Help Menu

The **Help** menu contains the following options:
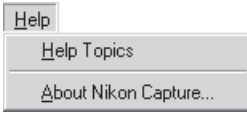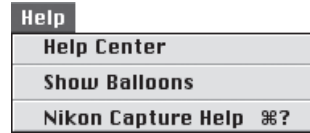
Windows   Macintosh

Help Topics/Nikon Capture Help

Selecting **Help Topics** (Windows) or **Nikon Capture Help** (Macintosh) opens the Nikon Capture 2 Help file to an index-type listing of help topics.

About Nikon Capture… (Windows only)

Opens a window which displays the product name, version number, and copyright information.

For more information about the other options available in the Macintosh help menu, see the documentation provided with your computer or operating system.

The Toolbar (Windows) and Tool Palette (Macintosh)

By clicking the buttons in the toolbar (Windows) or tool palette (Macintosh), you can perform a variety of operations, most of which replicate menu commands.

The Toolbar (Windows)

The toolbar at the top of the Nikon Capture 2 window can be hidden or displayed by selecting **Toolbar** from the **View** menu. When the cursor is positioned over a button, a label will pop up explaining its function.

The Tool Palette (Macintosh)

The palette can be moved anywhere on the desktop, or hidden or displayed using the **Tool Palette** item in the **View** menu.

The functions of the buttons in the toolbar and tool palette are explained opposite.

The Disk-Space Indicator

The color of the disk space indicator shows how much unused hard-disk space is available.

Green: More than 200 MBs available on both the volume used for temporary storage and on the volume used to store thumbnails

Yellow: Less than 200 MBs remaining on one or both volumes.

Red: Less than 100 MBs remaining on one or both volumes. Choose a different volume from the File Locations tab of the Preferences dialog (📖 pg. 197), or free space by deleting unnecessary files.

Connection Status Indicator

The camera icon at the bottom of the status bar (Windows) or the tool palette (Macintosh) is the connection status indicator. See the Tutorial for details (📖 pg. 64, 65).

Button	Function
	Same as the **Open** command in the **File** menu.
	Same as the **Save** command in the **File** menu.
	Same as the **Open in Photoshop** command in the **Image** menu.
	Same as the **Copy Image Adjustment** command in the **Edit** menu.
	Same as the **Paste** command in the **Edit** menu.
	Same as the **Selection Cursor** command in the **View** menu.
	Same as the **Zoom Cursor** command in the **View** menu.
	Same as the **Grab Cursor** command in the **View** menu.
	Same as the **Camera Control** command in the **View** menu.
	Same as the **Image Adjustment Control Panel** command in the **View** menu.
	Same as the **Camera Image** command in the **View** menu.
	Same as the **90 degrees CW** command in the **Image** > **Rotate** submenu.
	Same as the **90 degrees CCW** command in the **Image** > **Rotate** submenu.
	Same as the **Batch** command in the **File** menu.
	Same as the **Custom Settings** command in the **Camera** menu.
	The effects of changes to settings in the active image adjustment window (White Balance, Advanced RAW, Curves, Color Balance, or Unsharp Mask window) are hidden while this button is held down.
	When this button is clicked, a question mark appears next to the mouse pointer. Clicking on a window, menu, or button while the question mark is displayed will open the help file to the section that explains the function of the item clicked (Windows only).

Appendices

Appendix A: Supported Color Profiles

1. Standard RGB Profiles Supported in Nikon Capture 2

1.1 Profiles with a Gamma Value of 1.8
Apple RGB
This profile is used in desk-top publishing applications and in Adobe Photoshop versions 4.0 or earlier, and is the typical RGB profile for Macintosh monitors. The corresponding RGB setting in Adobe Photoshop is "Apple RGB." This profile is suitable for working with images displayed on the Macintosh.

ColorMatch RGB
The ColorMatch profile is native to Radius PressView monitors. It has a wider gamut than Apple RGB, with a particularly wide area devoted to the reproduction of blues. The corresponding RGB setting in Adobe Photoshop is "Color Match RGB."

1.2 Profiles with a Gamma Value of 2.2
sRGB
This RGB profile is used in the majority of Windows monitors. It closely resembles the RGB commonly used in color television, and is also used in the digital television broadcasting system that is on its way to becoming the industry standard in the United States of America. Software and hardware manufacturers use it as a default color profile and guarantee operation when it used. It is also on its way to becoming the standard for images on the web. This profile is suited to users who plan to use their digital images "as is," without editing or printing them. It however suffers from the drawback of a narrow gamut with a limited area available for reproducing blues. The corresponding RGB setting in Adobe Photoshop 5.0 and 5.5 is "sRGB," the corresponding setting in Adobe Photoshop 6.0 "sRGB IWC61966-2.1."

Bruce RGB
This color profile attempts to expand on the ColorMatch RGB gamut by defining the chromaticity for G as lying between the values for G in the Adobe RGB and ColorMatch color-space profiles. It was proposed by Bruce Fraser, who claims that it includes most of the colors in the SWOP CMYK gamut. The R and B used in the Bruce RGB and Adobe RGB color-space profiles match.

NTSC (1953)
This is the color space for video defined by the National Television Standards Committee (NTSC) in 1953 and used in early color televisions. This color space is also used in some Far-East newspaper and printing organizations. The corresponding RGB setting in Adobe Photoshop is "NTSC (1953)."

Adobe RGB (1998)

A color-space profile defined in Adobe Photoshop 5.0. It has a wider gamut than sRGB and includes the colors found in most CMYK gamuts, making it suitable for users involved in desktop publishing. The corresponding RGB setting in Adobe Photoshop 5.0 is "SMPTE-240M," the corresponding setting in Adobe Photoshop 5.5 or later "Adobe RGB (1998)."

CIE RGB

A video color-space profile established by the Commission Internationale de l'Éclairage (CIE). While it boasts a fairly wide gamut, it suffers from the drawback that the area devoted to the reproduction of cyan is relatively small. The corresponding RGB setting in Adobe Photoshop is "CIE RGB."

Wide Gamut RGB

This color-space profile, designed by Adobe, incorporates most of the visible colors. This however has the consequence that most of the colors it can express can not be reproduced on standard monitors and printers. The corresponding RGB setting in Adobe Photoshop 5.0 or later is "Wide Gamut RGB."

The gamut of colors that can be expressed in the above color-space profiles is shown in the following chromaticity (x, y) graph. The greater the area enclosed by the triangle that represents the color-space profile, the wider its gamut.
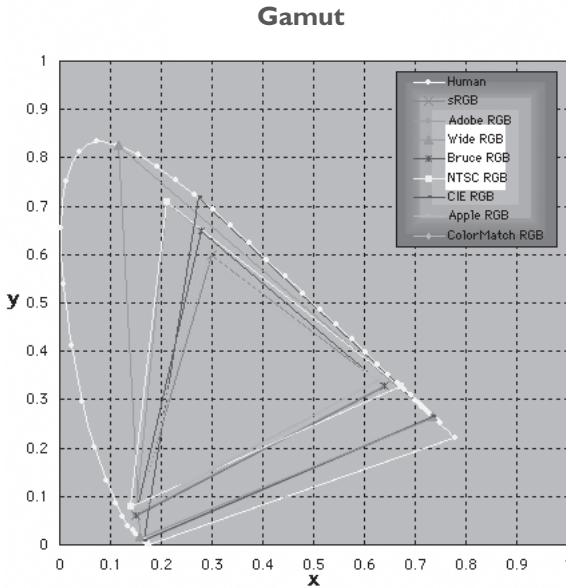
2. Technical Data for RGB Profiles Supported in Nikon Capture 2

The following table shows the gamma values for profiles supported in Nikon Capture 2, together with the chromaticity values for the white point and for red, green, and blue.

Profile	White Point		Gamma Value	Chromaticity (x,y)				
	Color Temperature	Value		Name		R	G	B
Apple RGB	6500K (D$_{65}$)	x 0.31271591 y 0.32900148	1.8	Trinitron	x y	0.625 0.34	0.28 0.595	0.155 0.07
Color Match RGB	5000K (D$_{50}$)	x 0.34570292 y 0.3585386	1.8	P22-EBU	x y	0.63 0.34	0.295 0.605	0.155 0.077
sRGB	6500K (D$_{65}$)	x 0.31271591 y 0.32900148	2.2	HDTV (CCIR 709)	x y	0.64 0.33	0.3 0.6	0.15 0.06
NTSC (1953)	Std Illuminant C	x 0.3101 y 0.3162	2.2	NTSC (1953)	x y	0.67 0.33	0.21 0.71	0.14 0.08
Bruce RGB	6500K (D$_{65}$)	x 0.31271591 y 0.32900148	2.2	Bruce RGB	x y	0.64 0.33	0.28 0.65	0.15 0.06
Adobe RGB (1998)	6500K (D$_{65}$)	x 0.31271591 y 0.32900148	2.2	Adobe RGB (1998)	x y	0.64 0.33	0.21 0.71	0.15 0.06
CIE RGB	Std Illuminant C	x 0.33333333 y 0.33333333	2.2	CIE RGB	x y	0.735 0.265	0.274 0.717	0.167 0.009
Wide Gamut RGB	5000K (D$_{50}$)	x 0.34570292 y 0.3585386	2.2	700/525/450 nm	x y	0.735 0.265	0.115 0.826	0.157 0.018
Default Windows monitor	6500K (D$_{65}$)	x 0.31271591 y 0.32900148	2.2	HDTV (CCIR 709)	x y	0.64 0.33	0.3 0.6	0.15 0.06
Default Macintosh monitor	5000K (D$_{50}$)	x 0.34570292 y 0.3585386	1.8	Trinitron	x y	0.625 0.34	0.28 0.595	0.155 0.07

Appendix B: Color Matching in Adobe Photoshop (Version 5.0.2 or Later)

When an image saved in Nikon Capture 2 is opened in Adobe Photoshop, the profiles used in Adobe Photoshop should match those used in Nikon Capture 2. If the profiles do not match, the colors seen in Adobe Photoshop may not be the same as those in the original image. The profiles used with Nikon Capture 2 can be used with Adobe Photoshop version 5.0.2 or later.

The first step is to match the Nikon Capture 2 monitor profile with that used in Adobe Photoshop. The point to remember is that you should specify the monitor profile for Adobe Photoshop first and then select the same profile for Nikon Capture 2. For more information, see "Choosing a Monitor Profile" ().

The next step is to save the image from Nikon Capture 2 using a format that supports inclusion of color profile information. If you save the image in TIFF, JPEG (JFIF), JPEG (EXIF), and PICT, information about the color profile used in Nikon Capture 2 will be embedded in the file, and Adobe Photoshop will use this information to process colors appropriately when the file is opened. Color profile information can not be included with files saved in BMP format, with the result that settings must be correctly adjusted in Adobe Photoshop before the files are opened. For more information, see "Adjusting Settings in Adobe Photoshop" ().

🖼 ColorSync (Macintosh)

The explanation in this section assumes that ColorSync version 3.0 or later is installed on your Macintosh.

Choosing a Monitor Profile

Choose a monitor profile as described below.

Creating a New Monitor Profile

If you have not yet calibrated your monitor, use Adobe Gamma to create a profile for your monitor. Adobe Gamma is included in the standard install of Adobe Photoshop.

Creating a Monitor Profile (Adobe Photoshop 5.x)

1 Select **Color Management…** from the Adobe Photoshop **Help** menu.
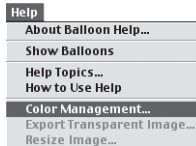
2 Click **Open Adobe Gamma….**
In the Adobe Color Management Assistant dialog, click **Open Adobe Gamma…**.
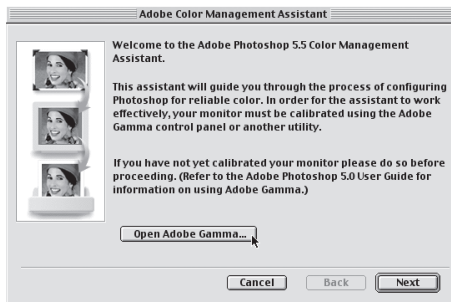
3 Create a color profile.
Follow the on-screen directions to calibrate your monitor. The resulting monitor profile will be saved in one of the folders listed below. Make a note of the file name.
- Windows: Windows\System\Color
- Macintosh: System Folder : ColorSync Profiles
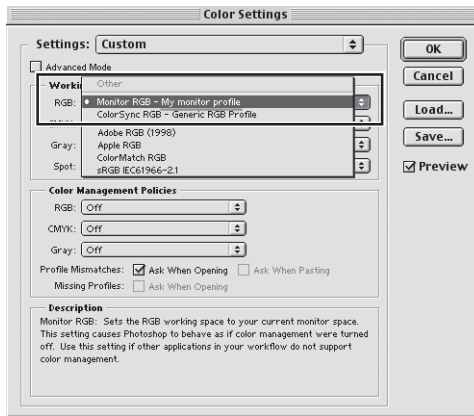
4 Choose the profile created in Step 3 for Nikon Capture 2.
Choose the profile created in Step 3 as the Nikon Capture 2 monitor profile. For details, see "Preferences: The CMS Tab" (👿 pg. 201).

Creating a Monitor Profile (Adobe Photoshop 6.0)

1 Select **Adobe Gamma** from the system control panels **or double-click the Adobe Gamma** utility icon.

2 Create a color profile.
Follow the on-screen directions to calibrate your monitor. The resulting monitor profile will be saved in one of the folders listed below. Make a note of the file name.
- Windows: Windows\System\Color
- Macintosh: System Folder : ColorSync Profiles

3 Choose the profile created in Step 2 for Nikon Capture 2.
Choose the profile created in Step 2 as the Nikon Capture 2 monitor profile. For details, see "Preferences: The CMS Tab" (pg. 201).

Using an Existing Monitor Profile

If you have already calibrated your monitor, follow the steps below to select an existing monitor profile.

Using an Existing Monitor Profile (Adobe Photoshop 5.x)

1 Select **Color Settings** > **RGB Setup…** from the Adobe Photoshop **File** menu.
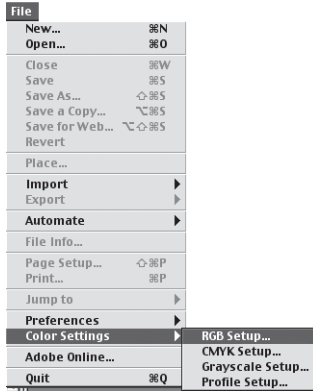
2 Note the name of the monitor profile.

Make a note of the name that appears to the right of the "Monitor" entry in the second line of the RGB Setup dialog.
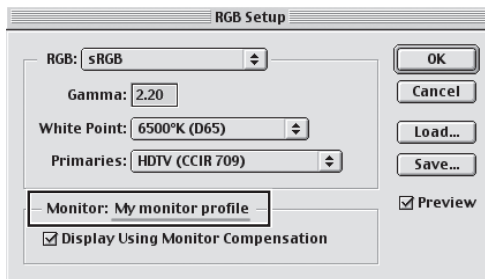
3 Locate the monitor profile.

The monitor profile that appeared in Step 2 will be stored in one of the folders listed below.
- Windows: Windows\System\Color
- Macintosh: System Folder : ColorSync Profiles

4 Choose the profile as the Nikon Capture 2 monitor profile.

Choose the profile noted in Step 2 as the Nikon Capture 2 monitor profile. For details, see "Preferences: The CMS Tab" (pg. 201).
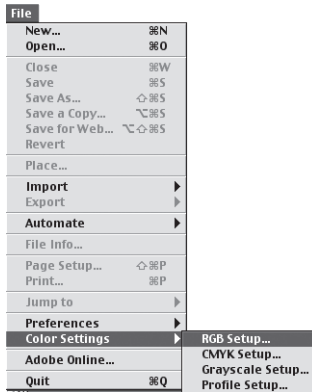
Using an Existing Monitor Profile (Adobe Photoshop 6.0)

1 Select **Color Settings…** from the Adobe Photoshop **Edit** menu.
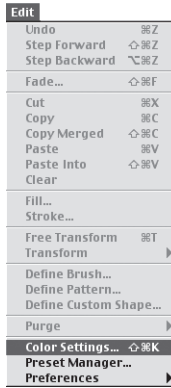
2 Note the name of the monitor profile.
Open the **RGB** pop-up menu in the **Work Spaces** section of the **Color Settings** dialog. The monitor profile will appear to the right of the **Monitor RGB** entry. Note down the name of the profile.

3 Locate the monitor profile.
The monitor profile that appeared in Step 2 will be stored in one of the folders listed below.
• Windows: Windows\System\Color
• Macintosh: System Folder : ColorSync Profiles

4 Choose the profile as the Nikon Capture 2 monitor profile.
Choose the profile noted in Step 2 as the Nikon Capture 2 monitor profile. For details, see "Preferences: The CMS Tab" (pg. 201).

If you are unable to locate a profile with the correct name, create a new profile as directed in "Creating a Monitor Profile" on page 227.

The Macintosh version of Adobe Photoshop (version 5.0.2 or later) automatically selects the ColorSync system profile as the monitor profile. The ColorSync system profile can be accessed from the Mac OS Monitor control panel. This means that you can match the Nikon Capture 2 monitor profile to the Adobe Photoshop monitor profile as follows:

1 Copy the desired monitor profile to the System folder.
Copy the desired monitor profile to the ColorSync Profile folder in the System folder.

2 Open the Monitor control panel and click **Color**.
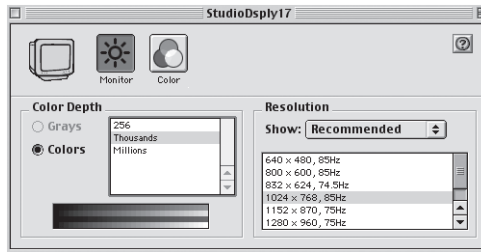
3 Select the monitor profile.
Select the monitor profile you copied to the System folder in Step 1 from the list of ColorSync profiles and close the control panel.
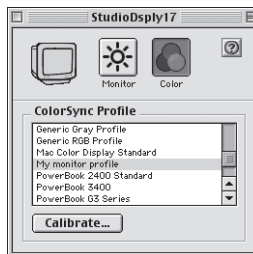
4 Choose the profile as the Nikon Capture 2 monitor profile.
Choose the selected monitor profile as the Nikon Capture 2 monitor profile. For details, see "Preferences: The CMS Tab" (👁 pg. 201).

Adjusting Settings in Adobe Photoshop

The following describes the minimum necessary adjustments to ensure consistent color reproduction in Adobe Photoshop. The menus and dialogs referred to below are all from Adobe Photoshop.

Opening TIFF, JPEG (JFIF), JPEG (EXIF), and PICT Images Created Using Nikon Capture 2
Images saved in TIFF, JPEG (JFIF), JPEG (EXIF) and PICT formats include color-space profile information. Open files in these formats as described below.

Opening TIFF, JPEG (JFIF), and PICT Images in Adobe Photoshop 5.x

1 Select **Color Settings** > **RGB Setup…** from the Adobe Photoshop **File** menu.
The RGB Setup dialog will be displayed.

2 Check **Display Using Monitor Compensation**.
In the Monitor section, check **Display Using Monitor Compensation**.
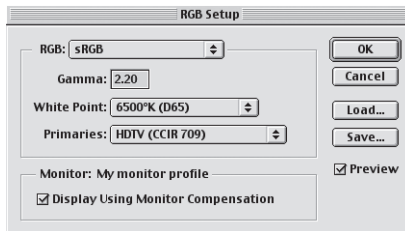
3 Click **OK**.

4 Select **Color Settings > Profile Setup…** from the Adobe Photoshop **File** menu.
The Profile Setup dialog will be displayed.
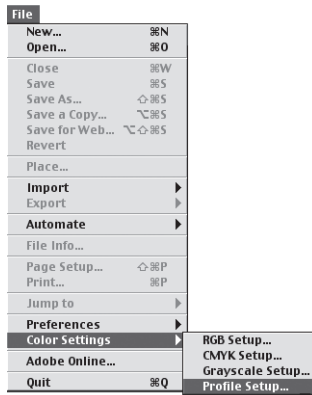
5 Select **Convert to RGB Color** for Profile Mismatch Handling.
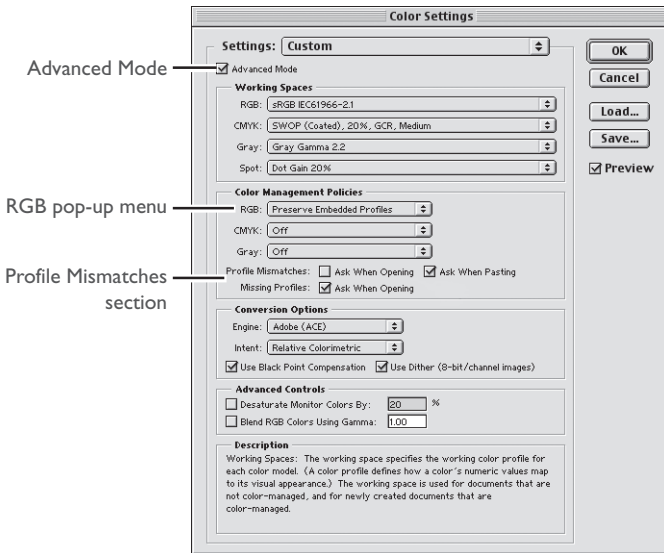Select **Convert to RGB Color** from the **RGB** pop-up menu in the Profile Mismatch Handling section.

6 Click **OK**.

Opening TIFF, JPEG (JFIF), and PICT Images in Adobe Photoshop 6.0
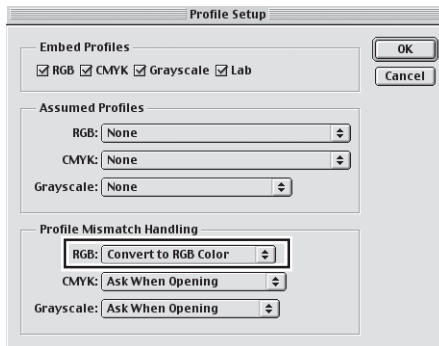
1 Select **Color Settings…** from the Adobe Photoshop **Edit** menu.
The Color Settings dialog will be displayed.
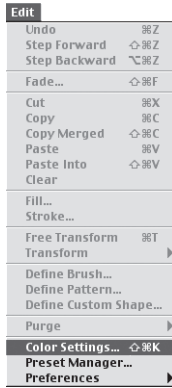
2 Check **Advanced Mode**.

3 Select **Preserve Embedded Profiles** for Color Management Policies.

Select **Preserve Embedded Profiles** from the **RGB** pop-up menu in the Color Management Policies section.

4 Remove the check from **Ask When Opening**.

Remove the check from **Ask When Opening** in the Profile Mismatches area of the Color Management Policies section.

5 Click **OK**.

At these settings, a warning dialog may be displayed when an image is opened. An option is available in this dialog which will prevent the warning from being displayed again.

Opening BMP Images Created Using Nikon Capture 2

Images saved in BMP format do not include color-space profile information. Consequently, the correct color-space profile must be selected in Adobe Photoshop before the image is opened. Follow the steps below to choose a color-space profile.

Opening BMP Images in Adobe Photoshop 5.x

1 Select **Color Settings** > **RGB Setup** from the Adobe Photoshop **File** menu.
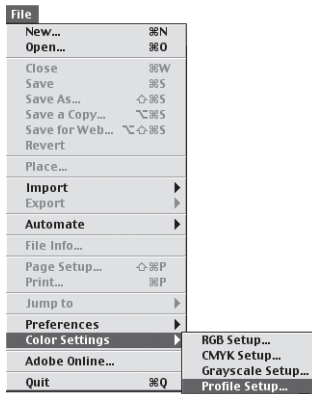The RGB Setup dialog will be displayed.
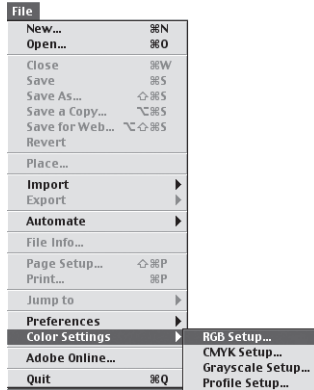
2 Check **Display Using Monitor Compensation**.
In the Monitor section, check **Display Using Monitor Compensation**.
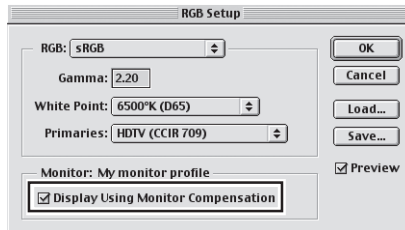
3 Click **OK**.

4 Select **Color Settings > Profile Setup…** from the Adobe Photoshop **File** menu.
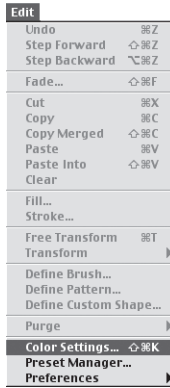The Profile Setup dialog will be displayed.

5 Select a profile that matches the output color-space profile used in Nikon Capture 2.
Using the **RGB** pop-up menu in the Assumed Profiles section, select a profile that matches the output color-space profile used in Nikon Capture 2 (🔲 238). Note that because Photoshop does not support the Bruce RGB color space, no matching profile can be selected when this profile is used in Nikon Capture 2.
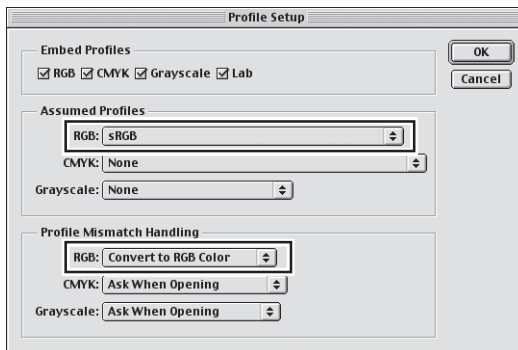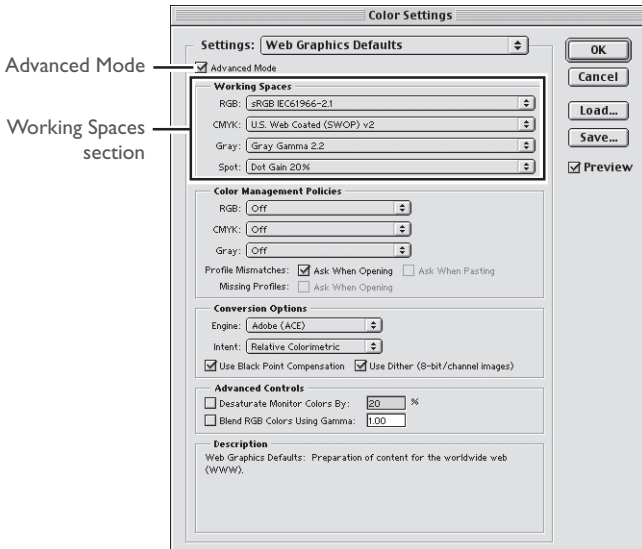

6 Select **Convert to RGB Color** for Profile Mismatch Handling.
Select Convert to RGB Color from the RGB pop-up menu in the Profile Mismatch Handling section.

7 Click **OK**.

1 Select **Color Settings…** from the Adobe Photoshop **Edit** menu.
The Color Settings dialog will be displayed.

2 Select **Web Graphics Defaults** from the **Settings** menu.

Advanced Mode

Working Spaces section

3 Check **Advanced Mode**.

4 Select a profile that matches the output color-space profile used in Nikon Capture 2.
Using the **RGB** pop-up menu in the Working Spaces section, select a profile that matches the output color-space profile used in Nikon Capture 2 (pg. 238). Note that because Photoshop does not support the Bruce RGB color space, no matching profile can be selected when this profile is used in Nikon Capture 2.

5 Click **OK**.

Nikon Capture 2 and Adobe Photoshop Color Profiles

Nikon Capture 2 output profile	Adobe Photoshop Profile
sRGB	sRGB
Apple RGB	Apple RGB
Color Match RGB	Color Match RGB
Bruce RGB	—
NTSC (1953)	NTSC (1953)
Adobe RGB (1998)	Version 5.5 or later: Adobe RGB (1998) Earlier versions: SMPTE-240M
CIE RGB	CIE RGB
Wide Gamut RGB	Wide Gamut RGB

Appendix C: Processing Images After They Are Taken

This section describes the steps involved in transferring photographs taken with the D1, D1x, or D1H to a computer and opening them in Nikon Capture 2 after the images are taken.

Transferring Existing Photographs to a Computer

Nikon Capture 2 can not be used to capture images from the camera memory card. To capture images already stored on the memory card:

• Remove the memory card from the camera and insert it in a card reader or card slot, where it will function as a disk
• Use Nikon View 4 to copy images directly from the camera memory card via the camera's IEEE 1394 interface
• Use Nikon View 4 to copy images from a card inserted in a card reader or card slot

Nikon View 4 can be used to browse the photographs taken with your camera, transfer selected images to disk, and register images with a specified image database application.

 Nikon View 4

For more information on Nikon View 4, see the *Nikon View 4 Reference Manual*.

Copying Images from Memory Cards to Disk

This section describes how to use Nikon View 4 to copy images from a card inserted in a card reader or card slot

1 Create a new folder.

Create a new folder on the computer's hard disk to hold images transferred from the camera. For purposes of illustration, we will give this folder the name "Original."

Original

2 Connect the camera or insert the memory card in a card reader or card slot.

Connect the camera or remove the memory card from the camera and insert the it in a card reader or card slot. Nikon View 4 will start automatically and the Image Transfer window will be displayed (the options in the Image Transfer window may differ slightly from those shown below).

Transfer button

Preferences button
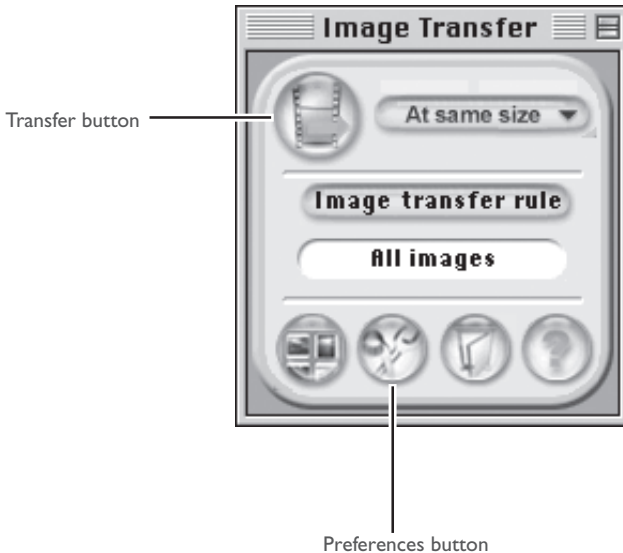
3 Choose the destination folder.

Click the Preferences button in the Image Transfer window to display the Preferences dialog. In the Transfer tab, select the folder you created in Step 1 as the destination folder. If desired, you can also select the image database software used to catalog images as they are transferred.

4 Transfer the selected images.

Click the Transfer button to transfer selected images to the folder specified in Step 3. Images will not be deleted from the memory card after transfer.

Opening Transferred Images in Nikon Capture 2

Images transferred to the hard disk can be displayed in Nikon Capture 2 by selecting **Open…** from the **File** menu. Images that have been catalogued using image database software can be browsed and the desired images selected from a list of thumbnail previews. This section describes how to open images catalogued in Canto Cumulus 5.

1 Start Canto Cumulus 5 and select the folder containing the images.

After starting Canto Cumulus 5, select the folder you created in Step 1 of the preceding section. The images in the folder will be shown as thumbnail previews.

2 Open selected images in Nikon Capture 2.

Select the desired thumbnails and choose **Open With** > **Other…** from the **Asset** menu. Choose Nikon Capture 2 as the application that will be used to open images. It will then appear in the **Open With** sub-menu as **Nikon Capture** or **Ncapture**. Choosing either item from the sub-menu will open selected images in Nikon Capture 2.
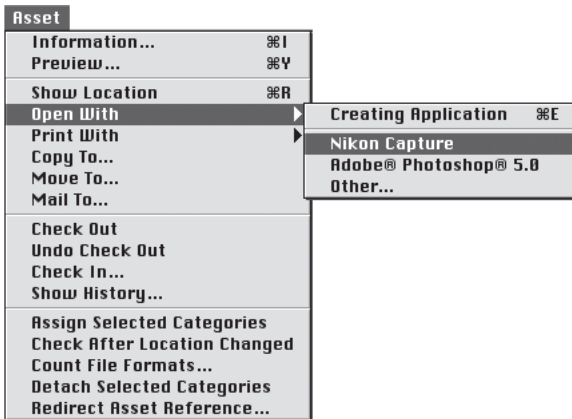
3 Perform image adjustment on the selected images.

Nikon Capture 2 will start and the selected images will be opened in image windows. Perform image adjustment as desired.
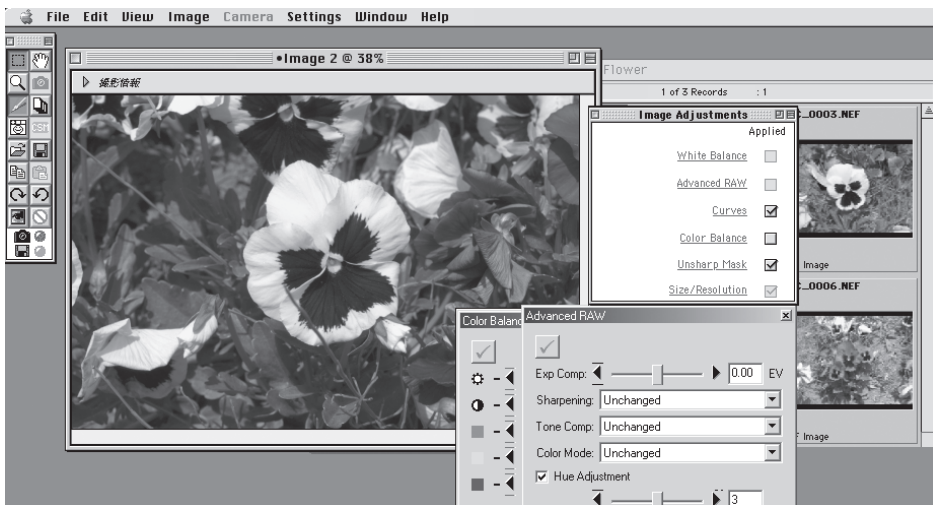
Settings can also be adjusted in Nikon Capture 2 so that images will automatically be opened in an imaging application such as Adobe Photoshop as they are saved in Nikon Capture 2. Once they are opened in the selected imaging application, images can be edited or retouched as necessary.

🔲 Image Database Software

For more information on image database software, see the documentation provided with the software in question.

Batch Scanning with Image Database Software

Image database software can be used when using batch processing option in Nikon Capture 2 to process images after transfer to the hard disk.

1 Create two new folders.

Create two new folders, one to hold the originals and the other to store the processed images, and name them appropriately (for example, "Batch In" and "Batch Out").
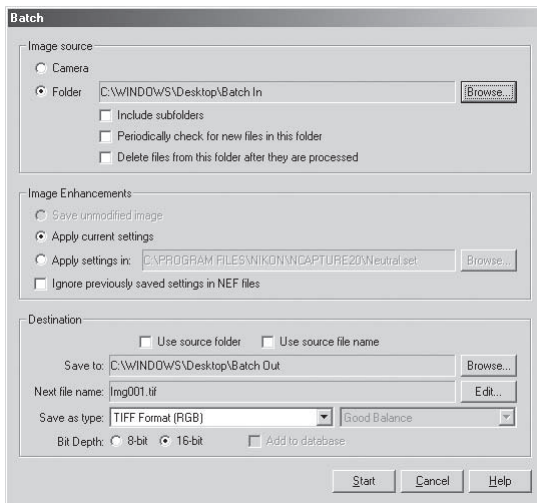
Batch In   Batch Out

2 Using image database software, copy the images to be processed to the "Batch In" folder

Start the image database software and select the images to be processed from the list of images that have been captured to disk. Copy the images to the "Batch In" folder.

3 Start Nikon Capture 2 and adjust batch settings.

Start Nikon Capture 2 and select **Batch** from the **File** menu or click the ⧉ button to open the Batch dialog. Select the Folder option in the Image source section and choose "Batch In" as the folder containing the originals. Choose the "Batch Out" folder as the **Destination** folder in the Save to section.

When batch processing is performed with these settings, the processed images will be saved in the "Batch Out" folder. Processed files can later be opened in imaging software such as Adobe Photoshop for further editing.

Appendix D: Troubleshooting

Should you encounter problems with Nikon Capture 2, check the list on the following pages before consulting your retailer or Nikon representative.

Nikon Capture 2 Does Not Start

Confirm that your computer system meets all of the requirements specified for using Nikon Capture 2 (OS, memory, hard disk capacity, etc.). See "Installing Nikon Capture 2."

Nikon Capture 2 Does Not Recognize the Camera

If the camera is connected to the computer, verify that the camera's mode dial is set to "PC." In PC mode, the control panel on the top of the camera will show PC, as will the view through the camera's viewfinder.

If the camera is set to PC mode, and Nikon Capture 2 still does not recognize the camera, check the following points:

1 Check the power switch and mode dial
- Is the camera on?
- Is the battery fully charged? To reduce the drain on the battery, we recommend that the camera be powered by an EH-4 AC adapter (available separately) when connected to the computer.
- If you are using an AC adapter, is it properly connected and plugged in?

2 Verify that the interface cable is properly connected
- Is the IEEE 1394 interface cable securely connected to both camera and computer? Remember that IEEE 1394 connectors do not make a "click" when fully inserted. If the cable is securely connected, try disconnecting the cable and reconnecting the devices in a different order.
- Is there another peripheral connected to the IEEE 1394 bus? Try disconnecting other IEEE 1394 devices and connecting just the computer and the camera.

3 Are you using a recommended IEEE 1394 interface?
See the system requirements in "Installing Nikon Capture 2." For information on your IEEE 1394 interface, see the manufacturer's web-site.

The ReadMe File

Included on the installer CD is a README file containing the most current information on Nikon Capture 2. Please read this file before installing and using Nikon Capture, as it may contain important information that could not be included in this manual. Should you encounter problems with Nikon Capture 2 not covered in this section, please consult the README file for the most up-to-date information.

4 Is the IEEE 1394 interface board correctly registered with the system (Windows only)?
Check whether:
- The "IEEE 1394 Bus Controller" is not displayed in the Device Manager
- The IEEE 1394 board is listed under "Other Devices" or "Unknown Devices"
- A yellow or red mark appears next to the listing for the IEEE 1394 board

If any of the above apply, the IEEE 1394 board has not been correctly registered with the system. See the documentation provided with the board for information on device registration.

Captured Images are Too Bright, Too Dark, Washed Out, or Out of Focus

- At default settings, Nikon Capture 2 does not modify image images when they are captured from the camera. In the General tab of the Preferences dialog, verify that your images are being captured at Nikon Capture's default settings and not at the settings of the last image captured. See "Preferences" for more information. Alternatively, check the settings in the Curves, Color Balance, and Unsharp Mask windows. Choose the reset option from the Settings menu for each window, or turn the Apply button for the window off.

- Are monitor settings correctly adjusted?
Try adjusting your monitor's contrast/brightness, color system, etc. to be sure that it is properly set for viewing images. See the documentation provided with your monitor for instructions on adjusting monitor settings.

Appendix E: Glossary

This glossary provides definitions of some of the terms used in this manual.

Bit depth
The number of bits used to express color, also referred to as color depth. The bit depth determines the amount of color information in an image. The greater the bit depth, the larger the number of colors, and the finer the gradations, that can be expressed. Bit depth can be used to refer both to the number of bits per channel and to the combined bit depth for all channels; thus, for example, an image with a bit depth of eight bits per channel can be said to have a bit depth of twenty-four bits. An image with a bit depth of one bit has only two colors, typically black and white, with no gradation between the two. *See also* Channel.

Black Point
The input value below which all input tones are mapped to the minimum output value (by default no color, or black). Any details darker than the black point will be lost. *See also* Tone, Tone curve.

Channel
The component colors in a given color space. The RGB color space is made up of red, green, and blue channels and a master channel that combines the three. *See also* Color space.

Clip
The percentage of pixels at both ends of the curve that are excluded in an auto contrast operation. *See also* Tone curve.

CMS
See Color management system.

CMYK
A reflective (subtractive) color model commonly used in printing, which models color using combinations of the three secondary colors used in printer's ink, **C**yan, **M**agenta and **Y**ellow. Because no combination of these three inks will create a true black, blac**K** ink is also used.

Color management system
A method of ensuring consistency of color reproduction between devices such as scanners, monitors, and printers, and between different computer platforms. In the color management system used in Nikon Capture 2, accurate color reproduction is ensured through the use of profiles that provide information about the characteristics of the monitor or printer and the color space used for editing. *See also* ColorSync, ICC, Profile.

Color space
A general term encompassing both the model used to define color (for example, CMYK or RGB) and the range, or gamut, of colors that can be expressed in a given color model. *See also* CMYK, Gamut, RGB.

ColorSync
A color management system for Mac OS developed by Apple. *See also* Color management system, ICC.

CompactFlash™ memory card
A small, removable flash memory card. Used for storage of photographs in Nikon digital cameras.

Compression

A method for reducing file sizes for storage or transmission. Compression algorithms can be divided into "lossless" algorithms, such as LZW, in which no information is lost when files are restored to their original size for display or editing, and "lossy" algorithms, such as JPEG, in which some information is lost when the file is restored. *See also* JPEG, TIFF.

Crop

The portion of the image selected in the Camera Image window Preview section or in an image window.

Curve

See Tone Curve.

Eyedropper

A tool for sampling white point, black point, or midpoint. *See also* Black point, Midpoint, White point.

FireWire

Apple's term for the IEEE 1394 interface. *See* IEEE 1394.

Gamma

Gamma (also written "γ"), a fundamental property of video systems, determines the intensity of the output signal relative to the input. When calculating gamma, the maximum possible input intensity is assigned a value of one, and the minimum possible intensity (no input) is assigned a value of zero. Output is calculated by raising input to the inverse of the gamma value (output = input$^{(1/\gamma)}$).

Gamut

The range of colors that can be expressed by a given input device (for example, scanner or digital camera), output device (monitor or printer), or color profile. No gamut can reproduce all of the colors seen by the human eye. The gamut of primary RGB (**R**ed, **G**reen, and **B**lue) transmitted light displays (film transparencies and color monitors) is very different from, and complementary to, the gamut of secondary CMYK (**C**yan, **M**agenta, **Y**ellow, and blac**K**) reflected light displays (printed materials). *See also* CMYK, Profile, RGB.

Gray point

See Midpoint.

Halo width

The extent of pixels around a selected central pixel affected when Unsharp Mask is applied. Also referred to as "radius." Increasing the halo width increases the width of edges affected by Unsharp Mask. Excessive application of Unsharp Mask results in an undesirable halo along edges in the image. *See also* Unsharp Mask.

Histogram

A bar graph showing the distribution of tones in an image. The horizontal axis shows tone level (brightness), the vertical axis the number of pixels. The bars in the graph show the number of pixels of a given brightness in the image. The histogram displayed in the Curves window shows the distribution of tones for the currently selected channel, and can be used for reference when editing curves. *See also* Tone, Tone curve.

ICC

The International Color Consortium, an international organization working to develop standards for color management and color management profiles. ICC profiles were developed for the conversion of color space information between devices, and are now on their way to becoming a global standard. ICC profiles have been proposed as an International Organization for Standardization (ISO) standard. *See also* Profile.

IEEE 1394

A high-speed transfer protocol developed by the Institute of Electrical and Electronics Engineers for connecting peripherals such as hard disks, MO drives, and digital cameras to a computer via a cable.

JPEG

A standard graphic format designed by the Joint Photographic Experts Group. Images are compressed using a discrete cosine transform that takes advantage of the properties of human vision, which is more sensitive to light in the lower wavelengths, to increase quantization at lower frequencies. JPEG compression is "lossy," meaning that information is lost when images are compressed, leading to a drop in image quality. A lossless compression option is also supported in some implementations. JPEG images can be compressed to as much as 100:1, though quality will be significantly reduced. At a compression ratio of 20:1, image quality is not noticeably diminished.

LCD

Liquid Crystal Display. LCDs are notable for their thinness, lightness, and the fact that they consume relatively little energy.

Midpoint

Controls the output level for mid-tones in the original image. *See also* Tone, Tone curve.

NEF

An abbreviation of Nikon Electronic Image Format, an image file format developed by Nikon to support high-resolution, twelve-bit RAW image data. In Windows, NEF files have the extension ".nef". NEF images can be opened and edited only in Nikon Capture. The advantage of NEF is that while user settings such as curves and color balance are saved, they are not applied to the original image data. NEF images may thus be edited and saved several times without degrading or altering the original image. NEF files however require a relatively large amount of storage space. *See also* RAW image.

Noise

Data in an image file that are not a part of the original image, the digital equivalent of film grain. The presence of noise is reflected in a loss in image quality. Noise appears primarily in dark areas of the image, and can be reduced by adjusting exposure or lighting to fill in shadows.

ppcm

pixels per centimeter, a measure of resolution. The more pixels per centimeter, the higher the resolution. *See also* ppi, Resolution.

ppi

pixels per inch, a measure of resolution. The more pixels per inch, the higher the resolution. *See also* ppcm, Resolution.

Preferences

Settings controlling basic operations performed by a given program, adjustable by the user.

Profile

A file defining the color characteristics of an input device such as a scanner or digital camera, an output device such as a printer or monitor, or the color space used for editing images. Profiles are used by color management systems to ensure consistent color reproduction. The Nikon Color Management System used in Nikon Capture employs ICC profiles. *See also* **Color space, ICC.**

RAW image

A photograph taken at an image quality setting of HI-RAW. "Raw," unmodified image data from the camera's image sensor (charge-coupled display, or CCD) are saved in uncompressed form at a pixel bit-depth of twelve bits per pixel. RAW images can only be opened in Nikon Capture 2, and must be saved again in a standard image format such as TIFF or JPEG before they can be opened in another application. *See also* **NEF.**

Resolution

The density of dots or pixels that make up an image, measured in dots per inch (dpi) or pixels per inch (ppi); the resolution of Macintosh monitors, for example, is 72 ppi. The greater the density of dots or pixels, the higher the resolution and the greater the capacity to express detail. Resolution is hence the digital equivalent of film resolving power. Computer monitors typically have a resolution of 72 ppi or 96 ppi, while printers may have resolutions of 300 dpi, 600 dpi, 1200 dpi, or 2400 dpi. *See also* **ppcm, ppi.**

RGB

An additive color model commonly used in monitors, in which light emitted in three primary colors, **R**ed, **G**reen and **B**lue, is combined to create a wide variety of colors. White is modeled by mixing 100% of all three colors.

Scale

The output size of an image as a percentage of the input size. At a scale of 50%, images will be output at half their original size.

Speedlight

A brand name for Nikon flashes.

Threshold

The limit up to which Unsharp Mask will be applied. While it is generally the case that the higher the threshold, the greater the amount of sharpening applied, the exact effect depends on other Unsharp Mask settings, such as halo width. *See also* **Halo width, Unsharp Mask.**

Thumbnail

A small preview image, the digital equivalent of a photographic film contact sheet. Images loaded into Nikon Capture are displayed in a thumbnail list in the Thumbnails section of the Camera Image window.

TIFF

Tagged **I**mage **F**ile **F**ormat, an image file format for color or grayscale images, suited to storing bit-mapped images such as digital photographs. In some implementations, TIFF supports "lossless" LZW and packbit compression (in "lossless" compression methods, no information is lost when the image is compressed, as opposed to "lossy" compression methods such as JPEG, in which detail is sacrificed to achieve higher compression ratios). Images saved in TIFF format using Nikon Capture are not compressed. *See also* **Compression, JPEG.**

Tone

Pixel brightness, measured either as the combined intensity for red, green, and blue or the intensity of each of these colors (channels) individually. The number of tones that can be expressed depends on the bit depth of the image; Nikon Capture 2 supports 256 tone levels per channel at a bit depth of eight bits and 4096 tone levels per channel at a bit depth of twelve bits (data with a bit depth of twelve bits are handled internally as sixteen-bit data). The distribution of tones in the image can be seen in the Curves window histogram. *See also* **Bit depth.**

Tone curve

A visual tool for editing tones, enhancing brightness and contrast in a selected portion of the tone range. Changing the shape of the tone curve changes the mapping between input (the tones in the original image) and output (tones as they appear after editing). The digital equivalent of a densitometric curve. *See also* **Tone.**

Unsharp Mask

A filter for increasing the apparent sharpness of bit-mapped images. Sometimes abbreviated as "USM." Unsharp masks emphasize the differences in color and brightness between edges (outlines) and the rest of the image. *See also* **Halo width, Threshold.**

White balance

The human eye is able to adapt to changes in lighting, and consequently to humans a white object will still look white whether viewed in direct sunlight or under overcast skies, or indoors under incandescent or fluorescent lighting. A digital camera, in contrast, must adjust colors according to lighting if colors that appear white when viewed directly are also to appear white in the final photograph. This adjustment is called "white balance."

White point

The input value above which all input tones are mapped to the maximum output value (the default for the master channel is white). Any details brighter than the white point will be lost. *See also* **Tone, Tone curve.**

Index