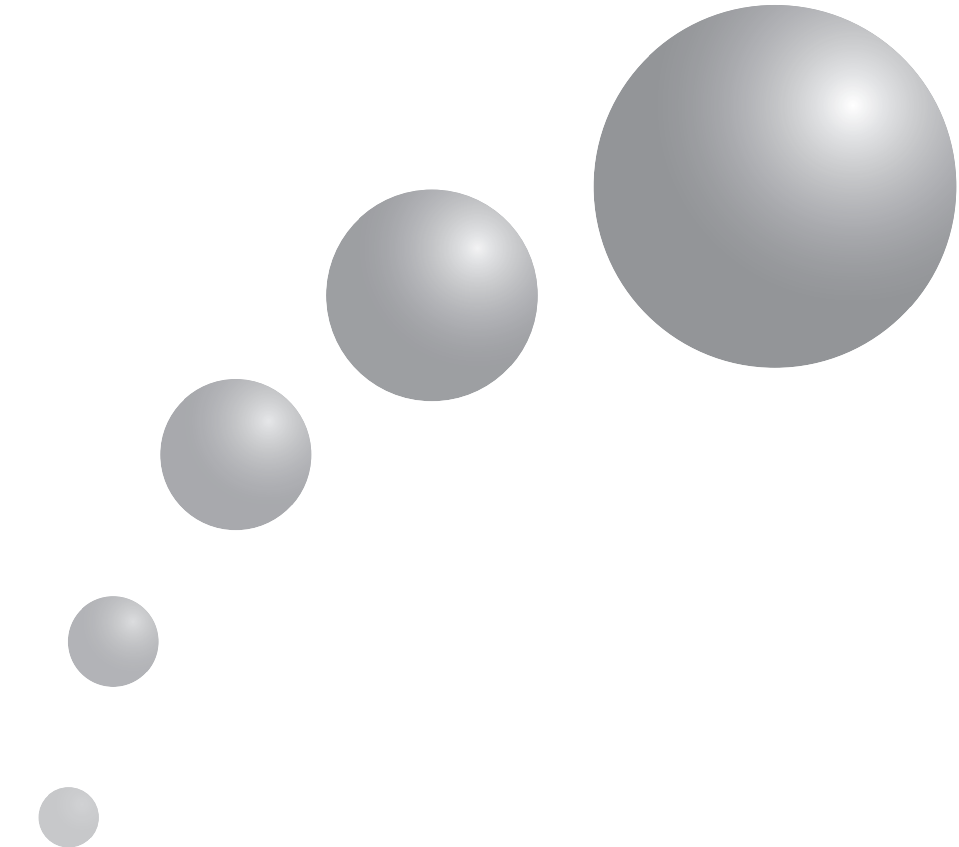
Nikon

En

Nikon Capture 3



User's Manual

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Package Contents

Before using this product, check that the package contains the items listed below. Contact your retailer or local Nikon representative should you find that any of these items are missing or damaged.

- Nikon Capture 3 installer CD
- *Nikon Capture 3 Install Guide*
- *Nikon Capture 3 User's Manual* (this manual)
- User registration card

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WARNING!
Do not play the Nikon Capture 3 installer CD on audio CD equipment. Playing a CD-ROM on an audio CD player could cause hearing loss or damage the equipment.

Table of Contents

Introduction

Before You Begin

Read this chapter before installing and using Nikon Capture 3.

Overview
Read this section for a description of how this manual is organized and for an explanation of the symbols and conventions used.

The Five Components of Nikon Capture 3
This section describes the components that make up Nikon Capture 3 and introduces some of its more notable features.

System Requirements
Before installing Nikon Capture 3, check that your computer system meets the requirements listed in this section.

The Elements of Nikon Capture 3
This section provides a brief overview of each of the components of Nikon Capture 3 and their functions.

Workflow
This section explains how Nikon Capture's various components work together when processing photographs taken in the field or in a studio setting, and how batch processing can be used to edit multiple images.

Overview

About This Manual

This manual has been written to help you take advantage of the many features included in Nikon Capture 3. This chapter introduces you to Nikon Capture's five components and explains how they can be used as part of different workflows. Each of these components is described in greater detail in the chapters that follow. The final chapter, "Technical Notes," includes information on how Nikon Capture can be used with other applications that support color management, together with troubleshooting instructions and a glossary of terms.

Before using Nikon Capture 3, you should know how Nikon Capture fits into your particular workflow, and what components and functions you will need. You can then refer to the chapters on the relevant functions as needed to complete each task.

Symbols and Conventions

The following symbols and conventions are used in this manual:

	This icon marks cautions, information that you should read before use to prevent possible damage to your camera or computer.		This icon marks notes, information that you should read before using 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.
Menu items and button names are shown in **bold**.			

Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

- For users in the U.S.A.: http://www.nikonusa.com/
- For users in Europe: http://www.nikon-euro.com/
- For users in Asia, Oceania, the Middle East, and Africa: http://www.nikon-asia.com/

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the URL below for contact information:

- http://www.nikon-image.com/eng/

Background Knowledge
This manual assumes knowledge of operations common to Windows and Macintosh environments. Refer to the documentation provided with your computer for more information on operations specific to your operating system.

Illustrations
This manual is for use with both Windows and Macintosh versions of Nikon Capture 3. While the majority of the illustrations in this manual show the Windows versions, save where otherwise noted the operations described apply to both operating systems. Depending on the operating system used, dialogs and menus may differ slightly from those shown here.

The ReadMe File
Be sure to read the ReadMe file on the Nikon Capture 3 installer CD, as it may contain important information that could not be included in this manual.

Camera Control (Macintosh)

The Macintosh version of Nikon Capture 3 Camera Control does not support the D100 digital camera.

Windows XP Home Edition/Professional, Windows 2000 Professional, Mac OS X

Installing and using Nikon Capture 3 under a multi-user operating system requires Administrator privileges. When using Nikon Capture 3, log in as:

Windows XP Home Edition/Professional	Computer administrator
Windows 2000 Professional	Administrator
Mac OS X	Administrator

The Five Components of Nikon Capture 3

About This Product

Thank you for your purchase of Nikon Capture 3 software for Nikon digital cameras. The Nikon Capture 3 CD contains both Nikon View 5 and Nikon Capture 3. Nikon View 5 is comprised of three components: Nikon Transfer, which is used to copy pictures from the camera memory card to the computer hard disk; Nikon Browser, which is used to browse images after they have been transferred to your computer, and Nikon Viewer, which is used to view images. Nikon Capture 3 contains an additional two components: Nikon Capture 3 Editor, which is used to enhance photographs after shooting, and Nikon Capture 3 Camera Control, which is used to control D1-series or D100 digital cameras remotely while they are connected to the computer. Using these five components, you can transfer pictures to your computer, view and edit them, and print them all in a single process.

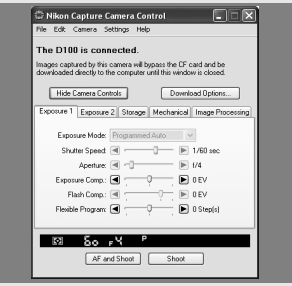
Existing pictures

Nikon Transfer

Starts automatically when a supported Nikon digital camera is connected, or a memory card from a supported Nikon digital camera inserted in a card reader or PC card slot. Use to transfer pictures from the camera to your computer hard disk. Once transferred, pictures can be previewed in Nikon Browser.

D1-series or D100 camera connected to computer

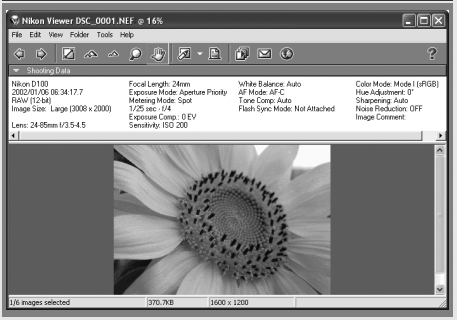
Nikon Capture 3 Camera Control



Use with a Nikon D1, D1x, D1h, or D100 digital camera to control the camera from your computer and save photos directly to disk as they are taken.

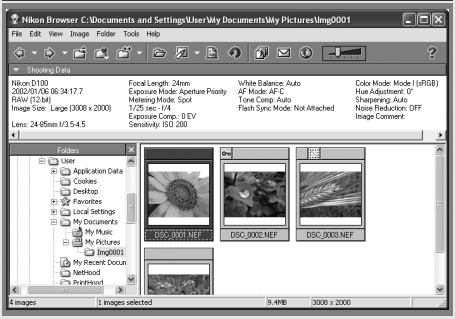
Data flow

Nikon Viewer



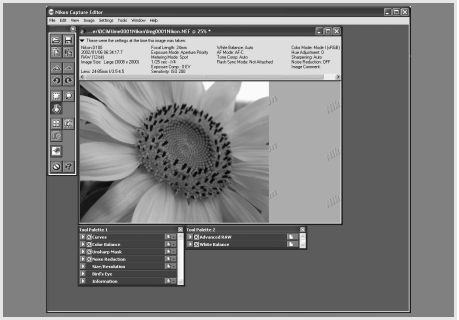
Use to view and print pictures.

Nikon Browser



Nikon Browser comes into play after you have transferred pictures to your computer hard disk using Nikon Transfer or Nikon Capture 3 Camera Control. Use to organize pictures into folders and select pictures for viewing in Nikon Viewer or editing in Nikon Capture 3 Editor.

Nikon Capture 3 Editor



Use to enhance photographs taken with Nikon digital cameras.

System Requirements

What You Need to Run Nikon Capture 3

Before installing Nikon Capture 3, make sure that your system satisfies the following requirements:

		Windows	Macintosh
OS		Pre-installed versions of Windows XP Home Edition, Windows XP Professional, Windows 2000 Professional, Windows Millennium Edition (Me), Windows 98 Second Edition (SE)	Mac OS 9.0.4*, 9.1, 9.2, Mac OS X (version 10.1.3† or later)
CPU/Model		300 MHz Pentium or better	iMac, iMac DV, Power Mac G3 (Blue & White), Power Mac G4 or later, iBook, PowerBook G3 or later
RAM (Nikon Capture 3)		• Windows XP, Mac OS X: 128 MB (256 MB or more recommended) • Mac OS 9: memory allocation of 32 MB or more to Nikon Capture 3 Camera Control, 128 MB or more to Nikon Capture 3 Editor • Other operating systems: 64 MB (128 MB with RAW images) or more recommended	
RAM (Nikon View 5)		64 MB (128 MB with RAW images) or more recommended.	
Hard-disk space		200 MB required for installation, with additional free disk space of 10 MB plus an amount equal to double the capacity of camera memory card available on system disk when Nikon Capture 3 is running.	
Video resolution		800 × 600 pixels or more with 16-bit color (High Color/thousands of colors). 24-bit color (True Color/millions of colors) recommended.	
Interface	**IEEE 1394****	**O**pen **H**ost-**C**ontroller **I**nterface (OHCI) compliant IEEE 1394 interface board or card†† required for connection to D1, D1X, and D1H	Built-in IEEE 1394 (FireWire) interface required for connection to D1, D1X, and D1H
	USB***	Built-in USB interface required for connection to D100 and COOLPIX-series cameras with USB interface. Direct connection to other COOLPIX-series cameras not supported.	
Supported cameras		• All functions, including Camera Control: D1, D1X, D1H, and D100††† • All functions except Camera Control: USB-equipped COOLPIX cameras	
Other		• CD-ROM drive required for installation • Internet connection required for upload to the Web; e-mail program required when sending pictures by e-mail	

* With CarbonLib version 1.5 or later.

† Camera Control with D1-series cameras not supported under Mac OS X versions 10.1.4 or earlier.

** The camera may not function as expected when connected to an IEEE 1394 hub.

†† A list of boards and cards that have been tested and approved for use with the D1, D1X, and D1H is available on-line (2).

*** The camera may not function as expected when connected to a USB hub or keyboard.

††† Camera Control with the D100 not supported in the Macintosh version of Nikon Capture 3.

Installation

For information on installing Nikon Capture 3, see the *Nikon Capture 3 Install Guide*.

Windows XP Home Edition/Professional, Windows 2000 Professional, Mac OS X

Installing Nikon Capture 3 under a multi-user operating system requires Administrator privileges. When installing Nikon Capture 3, log in as:

Windows XP Home Edition/Professional	Computer administrator
Windows 2000 Professional	Administrator
Mac OS X	Administrator

Mac OS 9.0

If you are using Mac OS 9.0, use the Software Update control panel to update to the latest version of CarbonLib before beginning installation.

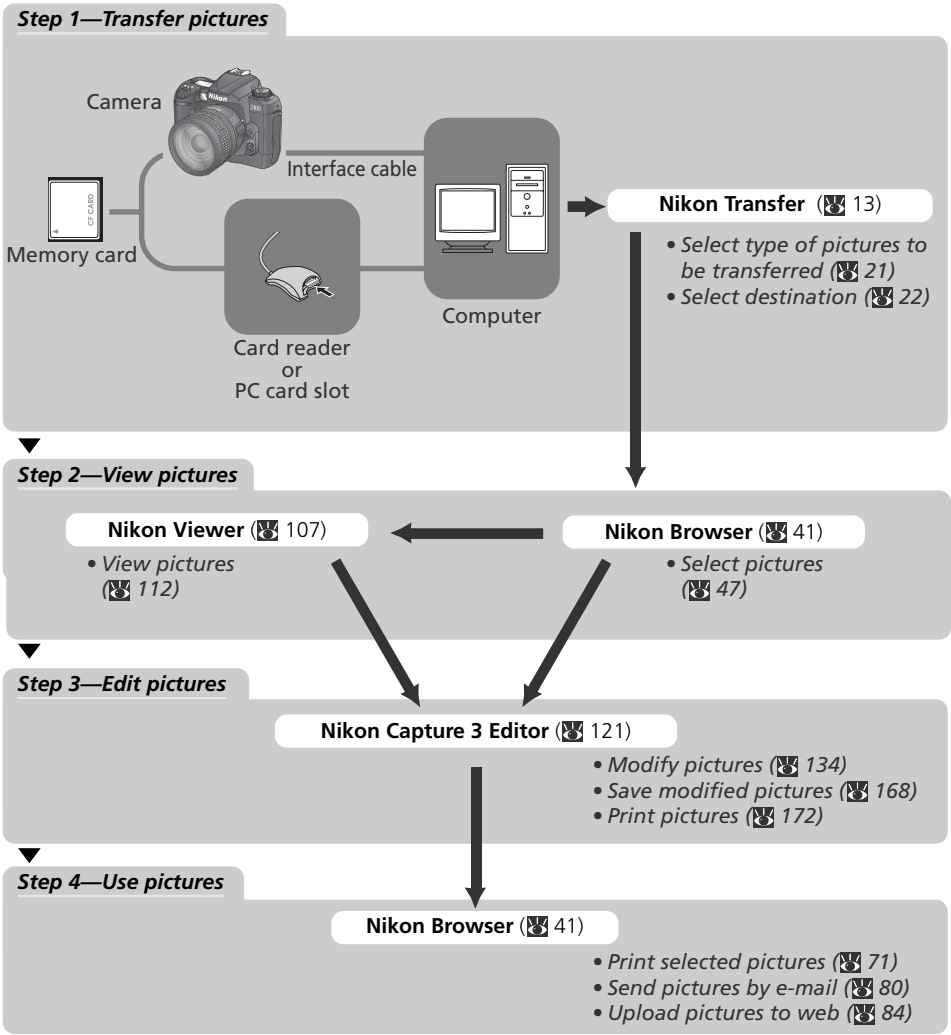
Workflow

Using Nikon Capture 3

How you will use Nikon Capture's various components depends on whether you are taking photographs in the field or in a studio with a D1, D1X, D1H, or D100 connected to a computer. Regardless of where you take your photographs, Nikon Capture 3's batch option can be used to process multiple images automatically.

Workflow 1: Field Photography

This workflow is for users of D100, D1-series, or COOLPIX cameras taking photographs in the field, away from their computers.



Workflow 2: Studio Photography

This workflow is for users of D100 or D1-series cameras who want to capture photographs directly to their computer as they are taken.

Step 1—Connect the camera

D1-series or D100 camera

Interface cable

Computer

- *If Nikon Transfer starts, click* ***Close*** *to exit*

Step 2—Start Nikon Capture 3 Camera Control

Nikon Capture 3 Camera Control ( 187)

Step 3—Take pictures

- *Take pictures directly using controls on camera body*
- *Take pictures from Camera Control*

Nikon Capture 3 Camera Control (187)

- *Adjust settings in Camera Control (204)*
- *Time lapse photography (201)*
- *Photos saved directly to disk (194)*

Step 4—View pictures

Nikon Viewer (107)

- *View pictures (112)*

Nikon Browser (41)

- *Select pictures (59)*

Step 5—Edit pictures

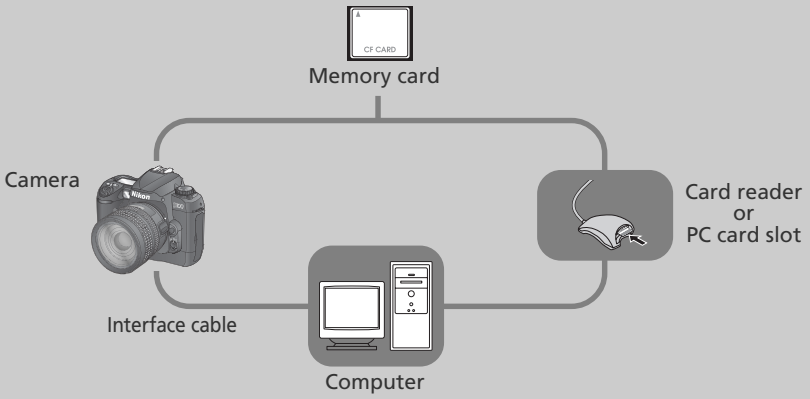
Nikon Capture 3 Editor (121)

- *Modify pictures (134)*
- *Save modified pictures (168)*

Workflow 3: Batch Processing (Existing Images)

Nikon Capture 3 includes a batch option for automatic processing of multiple images, either as they are captured from a D100 or D1-series camera (see Workflow 4), or after they have been saved to disk using Nikon Transfer or Nikon Capture 3 Camera Control. To process images after they have been saved to disk:

Step 1—Transfer pictures



Nikon Transfer (13)

- *Select pictures to be transferred (21)*
- *Select destination and file name (22)*

Step 2—Select pictures

Nikon Browser (41)

- *Select pictures (47)*

Step 3—Adjust settings

Nikon Capture 3 Editor (121)

- *Modify pictures (134)*
- *Save settings (167)*

Step 4—Process pictures

Batch dialog (173)

- *Process pictures (175)*

Workflow 4: Batch Processing (Studio Photography)

To process photographs automatically as they are captured from the camera ("live batch"):

Step 1—Connect the camera

D1-series or D100 camera

Interface cable

Computer

• *If Nikon Transfer starts, click* ***Close*** *to exit*

▼

Step 2—Start Nikon Capture 3 Camera Control

Nikon Capture 3 Camera Control (187)

▼

Step 3—Take a test shot

▼

Step 4—Adjust settings

Nikon Capture 3 Editor (121)

• *Modify picture (134)*
• *Save settings (167)*

▼

Step 5—Choose batch options

Nikon Capture 3 Camera Control (187)

Live Batch dialog (197)

• *Adjust settings*

▼

Step 6—Take pictures

Nikon Capture 3 Camera Control (187)

Nikon Transfer

Copying Pictures to Your Computer

Nikon Transfer is used to transfer (copy) pictures from the camera memory card to your computer. When transferring pictures, Nikon Transfer allows you to select the type of images to be transferred, choose transfer options, specify the destination folder for transferred images, and choose how transferred images will be named on the computer.

This chapter is divided into the following two sections:

The Nikon Transfer Window
This section outlines the controls and displays in the Nikon Transfer window, and describes how to start, exit, and restart Nikon Transfer.

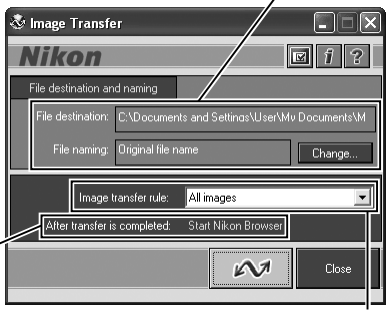
Transferring Images
Read this section for instructions on transferring images from a camera memory card to a folder of your choice on your computer.

The Nikon Transfer Window

Getting to Know Nikon Transfer

The main parts of the Nikon Transfer window are identified below.

File destination and naming
The destination folder and file naming method for transferred images are displayed in this area. To change the destination and file naming options, click **Change...** (22).



After transfer is completed
Shows the action that will be performed after transfer, as specified in the General tab of the Transfer options dialog (31).

Image transfer rule
Specifies the type of pictures that will be transferred from the memory card currently inserted in the camera, card reader, or PC card slot (21).

Button	Name	Function	
	Transfer options	Specify the actions to be performed when pictures are transferred.	30
	Add additional information (IPTC field) to images	Specify the information that will be added to pictures as they are transferred.	36
	Help	View help.	—
	Transfer	Transfer to the computer all pictures of the type selected in the **Image transfer rule** menu.	38
Close	**Close**	Close the Nikon Transfer window.	16

The Menu Bar (Macintosh)

The Macintosh version has a menu bar containing commands that replicate the functions of the buttons in the Nikon Transfer window. No menus are available in the Windows version.

Starting Nikon Transfer

Nikon Transfer starts automatically when a supported camera is connected or a memory card from a supported camera is inserted in a card reader or PC card slot.

1 **Connect the camera or insert the memory card**
Connect a camera containing a memory card from a supported camera is connected, or insert a memory card from a supported camera in a card reader or PC card slot. For information, see the *Nikon Capture 3 Install Guide*.

2 **Nikon Transfer will start automatically**

Auto Launch

Nikon Transfer will only start automatically if **Auto launch when connected to a camera or a card** (the default option) is selected in the "Auto Launch" tab of the Nikon Browser or Nikon Viewer Preferences dialog (96).

Starting Nikon Transfer from Nikon Browser or Nikon Viewer

Nikon Transfer can also be started by selecting **Launch Image Transfer…** from the **Tools** menu in Nikon Browser.

Starting Nikon Transfer on a Macintosh

When Nikon Transfer is started by connecting a camera or inserting a memory card in a card reader or PC card slot, Nikon Browser will also start automatically.

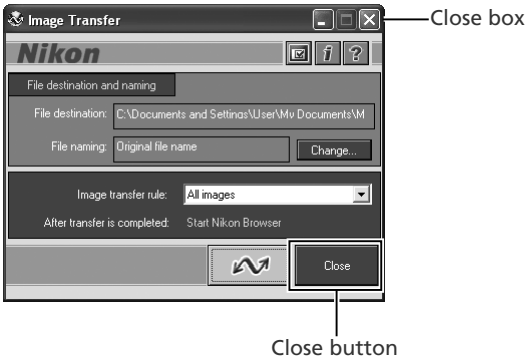
The Removable Disk Dialog (Windows XP)

When a camera is connected to a computer running Windows XP, or a memory card is inserted in a card reader or card slot connected to a computer running Windows XP, a Removable Disk dialog may be displayed. Select **Copy to a folder on my computer using Nikon View 5** and click **OK** to display the Nikon Transfer window. For more information on the Removable Disk dialog, see the *Nikon Capture 3 Install Guide*.

Exiting Nikon Transfer

The Nikon Transfer window will close automatically when transfer is complete, and the Nikon Browser window will be displayed. To close the Nikon Transfer window without transferring pictures:

1 **Click the Close button or click the close box**
Click the Close button in the Nikon Transfer window, or click the close box in the title bar at the top of the window.

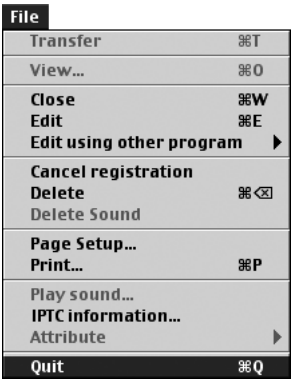


2 **The Nikon Browser window will be displayed**
Closing the Nikon Transfer window starts Nikon Browser (Windows) or activates the Nikon Browser window (Macintosh).

Quitting Nikon Transfer (Macintosh)

In Mac OS X, you can quit Nikon View 5 by selecting **Quit Nikon View 5** from the application menu. In Mac OS 9, select **Quit** from the **File** menu.

Mac OS X



Mac OS 9

Disconnecting the Camera

For information on disconnecting the camera, see the *Nikon Guide to Digital Photography* or *User's Manual* provided with your camera.

Warnings

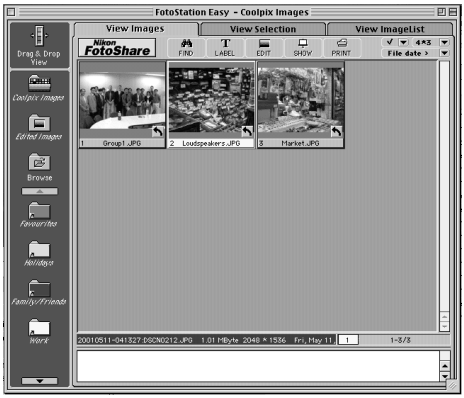
If you perform the following actions when Nikon Transfer is running, a warning will be displayed. Click **OK** to exit Nikon Transfer.

The following warning will be displayed if you disconnect the camera or card reader or turn the camera off while Nikon Transfer is running:

The following warning will be displayed if you remove the memory card from the card reader or card slot while Nikon Transfer is running:

FotoStation Easy (European Customers Only)

In the European release of Nikon View 5, FotoStation Easy will start automatically, when transfer is complete, or you click the Close button in the Nikon Transfer window. FotoStation Easy is an image database application, designed for use with Nikon View 5 and your Nikon digital camera. It includes a useful editing program for resizing, cropping, and enhancing pictures, and a handy search feature that allows you to locate image files either by name or using text labels added to pictures with the Nikon Transfer IPTC information option. Images can be kept in pre-named folders created by FotoStation Easy, ensuring that you never loose a picture. You can also share pictures at the touch of a button through Nikon FotoShare, Nikon's free on-line photo community for customers in some European countries (84).



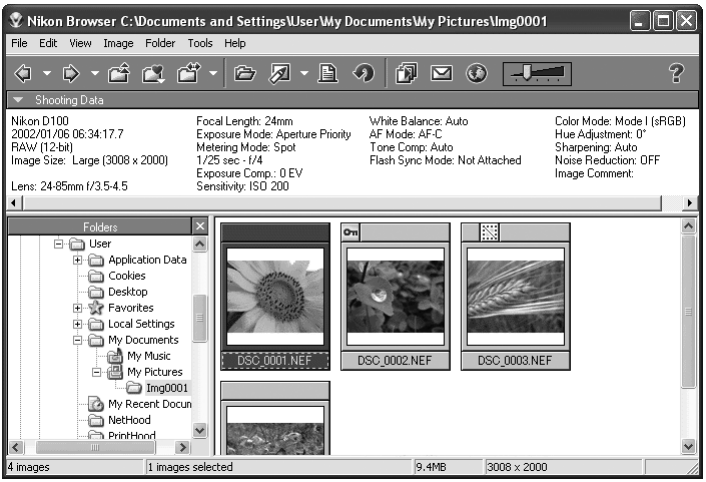
FotoStation Easy can also be used to organize pictures by folder, file name and text label. Images can be selected in FotoStation and then dragged to a conveniently titled folder such as Hobby, Friends and Family or Work. FotoStation Easy has simple to use tools for making images look better as well as cutting them down in size and saving them to a Nikon on-line photo album on the Internet.

Restarting Nikon Transfer

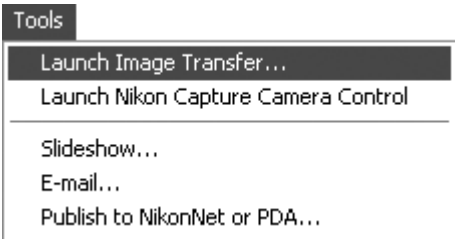
How you can restart Nikon Transfer after exiting depends on whether the camera is still connected and powered on and/or the memory card still inserted in the camera, card reader, or PC card slot.

If the camera is still connected and/or the memory card in place:

1 Start Nikon Browser (41)



2 Select **Launch Image Transfer…** from the **Tools** menu



If the camera has been turned off:
Turn the camera on.

If the camera has been disconnected:
Reconnect the camera and turn the camera on.

If the memory card has been removed from the camera:
Reinsert the memory card and turn the camera on.

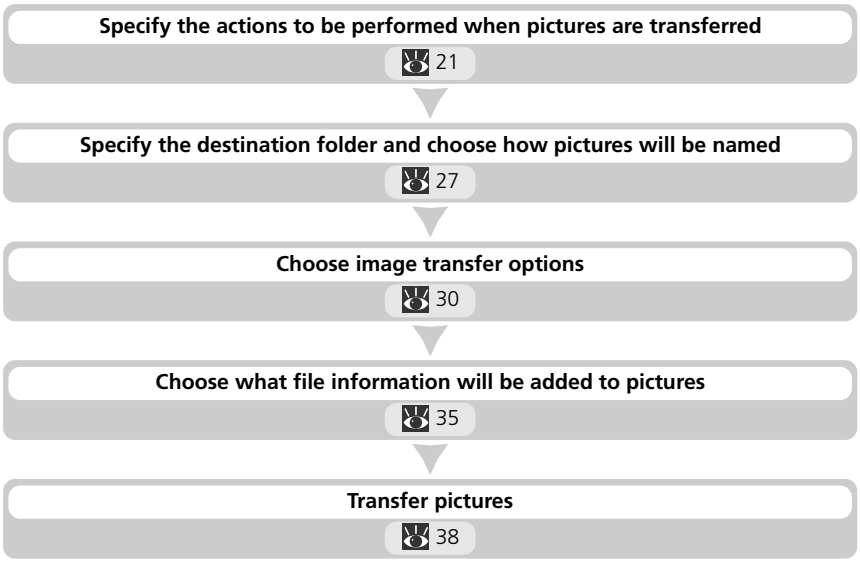
If the memory card has been removed from the card reader or PC card slot:
Reinsert the memory card.

Nikon Transfer will start automatically.

Transferring Images

Using Nikon Transfer

This section describes how Nikon Transfer can be used to transfer pictures to your computer from a memory card inserted in a camera, card reader, or PC card slot.



1 Choose the type of pictures to be transferred

Select the type of pictures to be transferred from the **Image transfer rule** menu.

The following rules are available:

Option	Description
All Images	All pictures are transferred.*
Images marked for transfer	Only pictures marked for transfer using the camera transfer marking function are transferred.
Images marked for protection	Only protected pictures are transferred.
Images unmarked for protection	Only pictures that have not been protected are transferred.

* Hidden images will only be transferred if the **Copy all images marked as "hidden"** option is checked in the Transfer tab of the Transfer Options dialog (30). If the camera is connected using PTP, all images will be transferred, regardless of whether **Copy all images marked as "hidden"** is selected.

Cameras with a Transfer Button

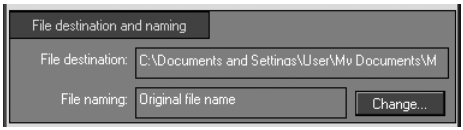
If your camera is equipped with a transfer button, you can use this button to transfer pictures to your computer. See the documentation provided with your camera for details.

Transfer Marking

Pictures can be marked for transfer using the camera transfer button or the **Transfer** or **Auto Transfer** options in the camera menus. Some cameras do not support transfer marking; see the documentation provided with your camera for details.

2 Choose a destination folder and file naming method

Before transferring pictures, you can select the destination folder on your computer hard drive and choose how the transferred files will be named on your computer.



"File destination and naming" area

File destination

This text box lists the current destination for transferred pictures. The default folder at installation is:

Windows
…\My Documents\My Pictures
(If the My Documents folder does not contain a My Pictures folder, pictures will be transferred to My Documents.)

Mac OS 9
Documents

Mac OS X
Pictures

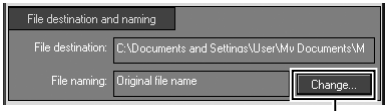
Hot Folders

If a hot folder is specified in the **Specify a hot folder** field of the Transfer Options Database tab (34), the hot folder will appear in the **File destination** text box and you will be not be able to choose a new destination folder.

File naming

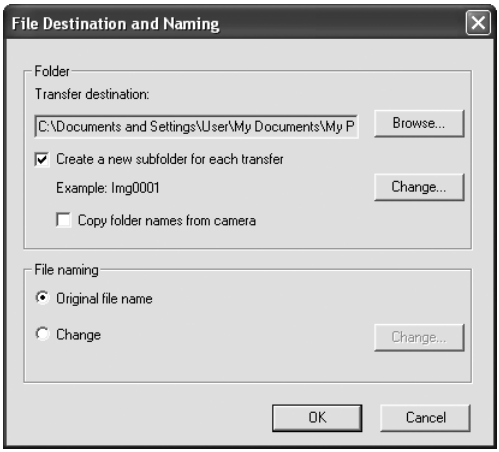
Two options are available: "Original file name" and "Automatically generated name." If the former is displayed, the images transferred to your computer will have the name originally assigned to them by the camera. If the latter is displayed, images will be assigned a new file name automatically generated by Nikon Transfer according to rules you specify.

To choose a new destination or change how files are named after transfer, click the **Change...** button.



Change... button

The File Destination and Naming dialog will be displayed.



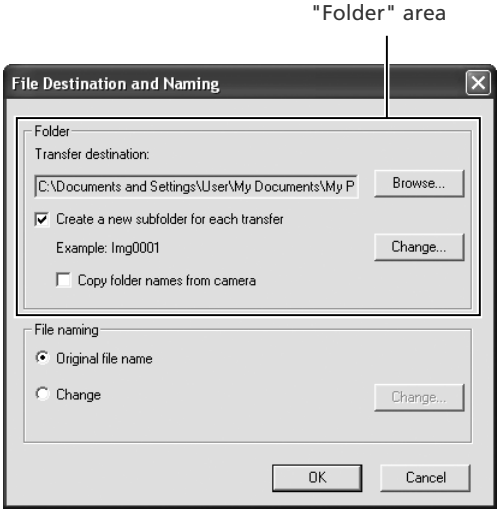
Any changes made in the File Destination and Naming dialog will be reflected in the "File destination and naming" area of the Nikon Transfer window.

Files with the Same Name

If you attempt to transfer pictures with the same names as files already present in the destination folder, the new files will be renamed by adding numbers sequentially before the period that separates the file name and the extension.

Folder

The "Folder" area of the File Destination and Naming dialog lists the folder in which pictures will be stored after transfer.

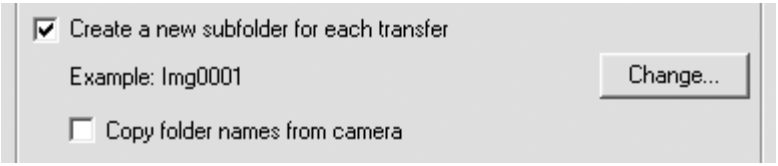


Transfer destination

This text box lists the current destination folder. To select a different folder, click **Browse...** and navigate to the desired folder. If you are using database software with a hot folder, "Database hot folder" will appear in the Transfer text box.

Create a new sub-folder for each transfer

Check this option to store images in a new sub-folder with each transfer. The sub-folder will be created under the folder listed in the "Transfer" text box and named as shown in the "Example" field. Click **Change...** to change how sub-folders are named.

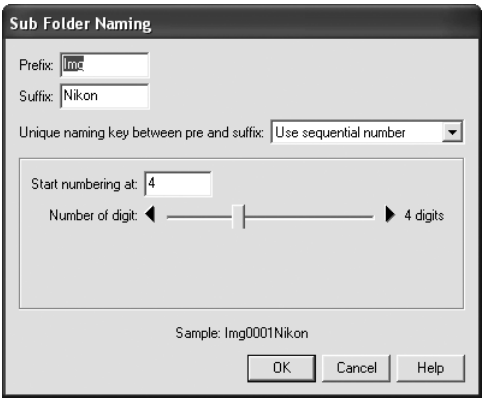


Copy folder names from camera

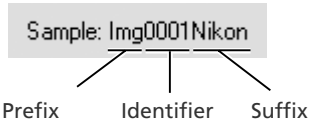
This check box is enabled when **Create a new sub-folder for each transfer** is checked. Checking this option to transfer pictures using the folder hierarchy and folder names (e.g., "100ND100") used on the camera memory card.

Sub Folder Naming

Clicking **Change...** in the Folder area displays the "Sub Folder Naming" dialog.



Folder names consist of a prefix, identifier, and suffix, where the identifier is a unique number, date, or date and time, depending on the option selected in the **Unique naming key between pre and suffix** menu.



Prefix

Specify the characters you want to append to the beginning of the folder name.

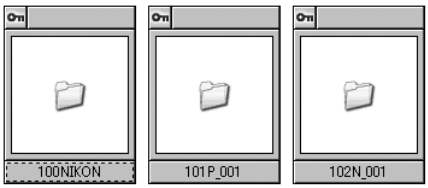
Suffix

Specify the characters you want to append to the end of the folder name.

Panorama Assist/Ultra HS

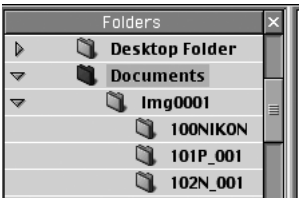
If you are using a Nikon camera equipped with a "Panorama Assist" scene mode or a "Continuous" setting of "Ultra HS," be sure to check **Copy folder names from camera** before transferring pictures to ensure that each sequence of pictures taken at these settings will be transferred a separate folder on the computer. These folders will be appear as sub-folders in the Nikon Browser thumbnail list (Windows) or folder tree (Macintosh).

Windows



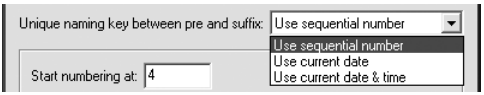
Other pictures | Panorama Assist | Ultra HS

Macintosh



Unique naming key between pre and suffix

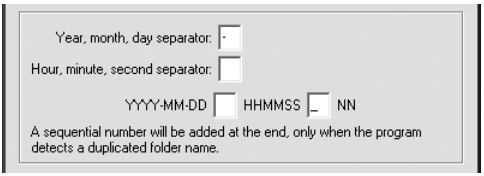
Use this pull-down menu to select the identifier portion of the folder name. Choose from **Use sequential number**, **Use current date**, or **Use current date & time**. The options in the "Sub-Folder Naming" dialog depend on the identifier selected.



When you select **Use sequential number**, names will be assigned to folders in ascending order beginning with the starting number and number of digits you specify.

When you select **Use current date**, the folder name will include the date of transfer.

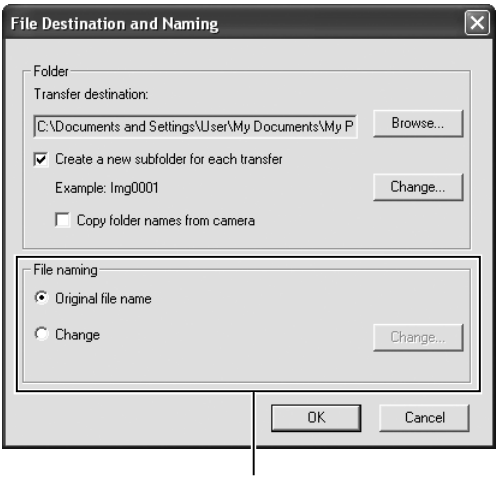
When you select **Use current date & time**, the folder name will include the date and time of transfer.



The date and time is of the form YYYY-MM-DD-HH-MM-SS-NN, where YYYY denotes the year, MM the month, DD the day of the month, HH the hour, MM the minute, SS the second, and NN the serial number added if the selected folder name already exists. The characters that will separate the year, month, and day and hour, minute, and second can be entered in the **Year, month, day separator** and **Hour, minute, second separator** text boxes.

Choosing a File Name

You can choose how files will be named in the "File naming" area of the File Destination and Naming dialog box.



"File naming" area

Original file name

Select this option to save transferred images using the file names originally assigned by the camera when the pictures were taken.

Change

Select this option to save the transferred files under an automatically generated file name.

File Naming Conventions

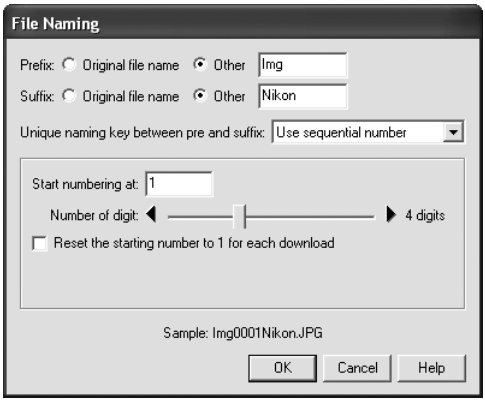
Windows: *In environments that do not support long file names*, the maximum length is eight characters; file names may not contain spaces, quotes, or any of the following characters: "\" "/" ":" "," ";" "*" "<" ">" and "|".

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 "|".

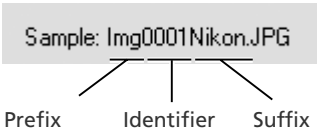
Macintosh: The maximum length for Macintosh file names is thirty-one characters. Colons (":") are not allowed.

File Naming

Clicking **Change...** in the File Naming area displays the "File Naming" dialog.



File names consist of a prefix, identifier, and suffix, where the identifier is a unique number, date, or date and time, depending on the option selected in the **Unique naming key between pre and suffix** menu.



Prefix

Select **Original file name** to append the file name assigned in the camera to the beginning of the transferred file name. Select **Other** to append characters of your choice to the beginning of the file name.

Suffix

Specify the characters you want to append to the end of the folder name.

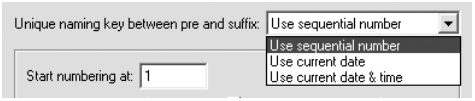
Extensions

Transferred files are automatically assigned an extension based on file type:

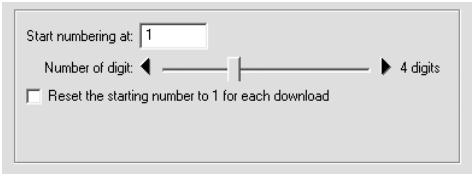
File type	Extension
Photograph (JPEG)	.JPG
Photograph (TIFF)	.TIF
Photograph (RAW)	.NEF
Movie	.MOV
Sound (voice memo)	.WAV

Unique naming key between pre and suffix

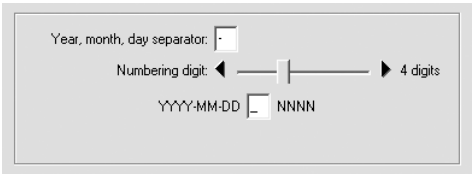
Use this pull-down menu to select the identifier portion of the file name. Choose from **Use sequential number**, **Use current date**, or **Use current date & time**. The options in the "File Naming" dialog depend on the identifier selected.



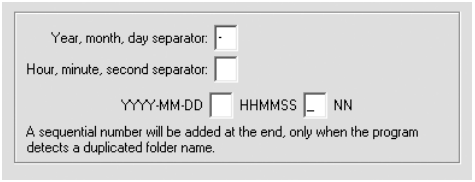
When you select **Use sequential number**, names will be assigned to files in ascending order beginning with the starting number and number of digits you specify.



When you select **Use current date**, the file name will include the date of transfer.



When you select **Use current date & time**, the file name will include the date and time of transfer.

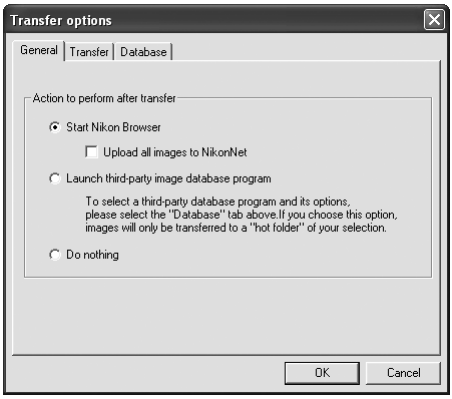


The date and time is of the form YYYY-MM-DD-HH-MM-SS-NN, where YYYY denotes the year, MM the month, DD the day of the month, HH the hour, MM the minute, SS the second, and NN the serial number added if the selected file name already exists. The characters that will separate the year, month, and day and hour, minute, and second can be entered in the **Year, month, day separator** and **Hour, minute, second separator** text boxes.

3 Choose image transfer options

Clicking the Transfer Options button in the Nikon Transfer window displays the Transfer Options dialog.

Transfer options button



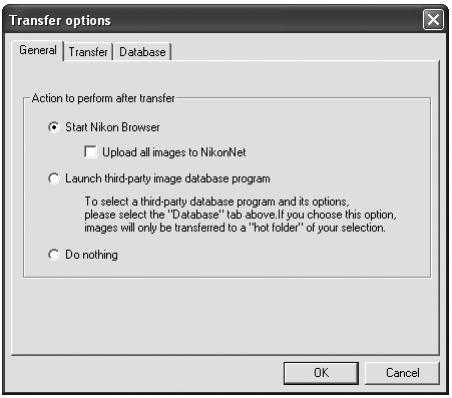
The Transfer Options dialog contains the following tabs:

Tab	Description	
General	Specify the actions that will be performed once transfer is complete.	31
Transfer	Specify what actions will be performed during transfer.	32
Creator (Macintosh version only)	Choose the applications that will be associated with transferred photographs, movies, and sound files.	33
Database	Choose a database program to catalog transferred files.	34

After changing transfer options, click **OK** to save changes and return to the Nikon Transfer window. Click **Cancel** to cancel any changes to settings and return to the Nikon Transfer window.

The General Tab

This tab allows you to choose what you want the computer to do after transferring image files.



Start Nikon Browser

Select this option to start Nikon Browser after the image files are transferred. Selecting this option enables the **Upload all images to NikonNet** check box.

Upload all images to NikonNet (North, South, and Central America only)

Check this box to upload all the transferred image files to NikonNet, a free on-line photo album service available to customers resident in the United States of America (85). This option is not available outside the Americas.

Launch third-party image database program

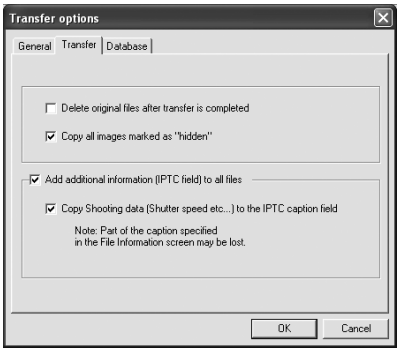
Select this option to launch the image database program specified in the Database tab (34) and catalog the transferred files.

Do nothing

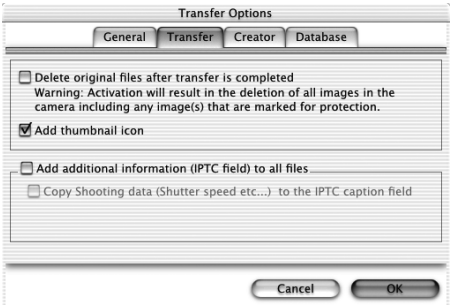
Select this option if you want Nikon View 5 to do nothing after the transfer of the image files is complete. On a Macintosh, the thumbnail display in Nikon Browser will not be updated when the images are transferred to your computer.

The Transfer Tab

This tab allows you to adjust settings for the images about to be transferred. Note that there are some differences between the Windows and Macintosh versions of this tab.



Windows



Macintosh

Delete original files after transfer is completed
Check this box to delete the image files from the memory card after they are transferred to your computer. Protected image files and image files that are not transferred are not deleted. If this box is not checked, the original files on the camera memory card will be left untouched after transfer.

Add thumbnail icon (Macintosh only)
Check this option to add thumbnail icons to the transferred image files.

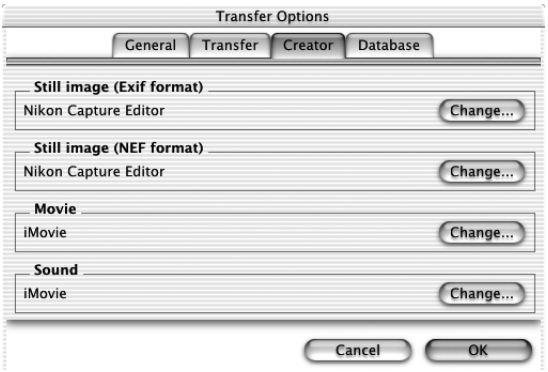
Copy all images marked as "hidden" (Windows only)
Check this option to transfer all the image files that are marked as "hidden." Hidden files are not transferred if the box is not checked.

Add additional information (IPTC field) to all files
Check this box to add the file information set in the IPTC Information dialog box (36) to the transferred image files. Selecting this option enables the **Copy Shooting data (Shutter speed etc....) to the IPTC caption field** check box.

Copy Shooting data (Shutter speed etc....) to the IPTC caption field
Check this box to copy shooting data to the caption field of images as they are transferred.

The Creator Tab (Macintosh Only)

This tab (available only in the Macintosh version) allows you to specify the programs that will be associated with transferred files. Double-clicking a file after transfer will open it in the associated program.



Still image (Exif format)

Lists the application associated with ".JPG" and ".TIF" image files. .

Still image (NEF format)

Lists the application associated with RAW (".NEF") image files.

Movie

Lists the application associated with ".MOV" movie files.

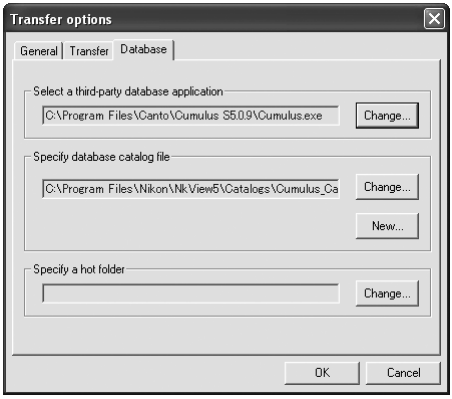
Sound

Lists the application associated with ".WAV" sound files.

Use the **Change...** buttons to specify application associated with each format .

The Database Tab

This tab allows you to specify the database program for managing the transferred image files.



Select a third-party database application

Click **Change…** and select the image database application you wish to use. Be sure that the application selected is supported under Nikon View 5.

Specify database catalog file

Set this field if the selected image database program catalogs images in a file (e.g., .Cumulus 5.0 or iViewMediaPro 1.0). Click **Change…** to select an existing catalog file, or click **New** to create a new catalog file.

Specify a hot folder

Set this field if the selected image database program stores image in folders. Click **Change…** to select a hot folder to which image files will be copied. The folder name you specify here is automatically reflected in the File Destination and Naming dialog (22).

If "Launch Third-Party Database Program" Is Not Selected

If **Launch third-party database program** is not selected in the General tab, the Database tab is disabled.

Supported Image Database Applications

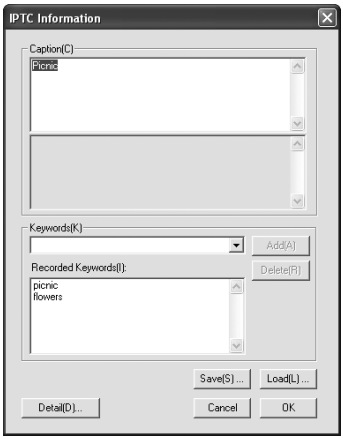
Support is provided for the following image database applications:
- Cumulus 5.0 (Canto Software): images registered in catalog
- FotoStation 4.0 (Fotoware): images registered in folder
- iView MediaPro 1.0.4 (iView Multimedia): images registered in catalog

4 Add file information

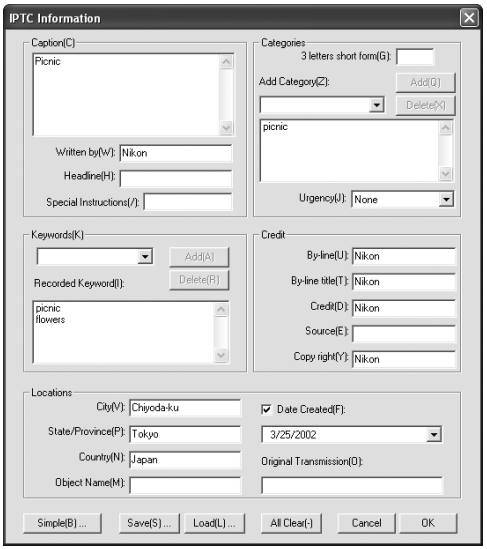
Clicking the (File Information) button displays the IPTC Information dialog, where you can specify additional file information, such as captions and keywords, that can be added to images as they are transferred. This information can be viewed in Nikon Browser after transfer (41).

File Information button

The IPTC Information dialog offers simple and detail views.



Simple view



Detail view

To switch from the simple to the detail view, click the **Detail…** button. Click **Simple…** to switch back.

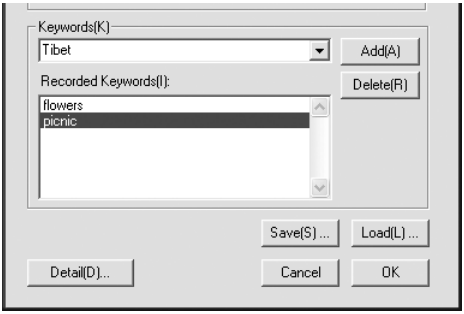
IPTC Information (Simple View)

Caption

The caption entered in this text box will be added to photographs if the **Add additional information (IPTC field) to all files** option is checked in the Transfer tab of the Transfer options dialog (30) when the pictures are transferred.

Keywords

Keywords entered in this area can be added to photographs if the **Add additional information (IPTC field) to all files** option is checked in the Transfer tab of the Transfer options dialog (30) when the pictures are transferred. To add keywords to the list in the Recorded Keywords text box, click **Add**. Up to twenty keywords can be recorded.



To save IPTC information in a separate file, click **Save…**. Previously saved information can be loaded by clicking **Load…**.

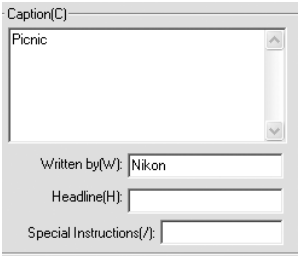
Adding File Information

The information in the IPTC Information dialog will be added to photographs if the **Add additional information (IPTC field) to all files** option is checked in the Transfer tab of the Transfer options dialog (30) when the pictures are transferred. IPTC information will not be added to movie files.

IPTC Information (Detail View)

Caption

Enter a caption in this text box as described on the preceding page. You can also add information in the **Written by**, **Headline**, and **Special Instructions** fields.

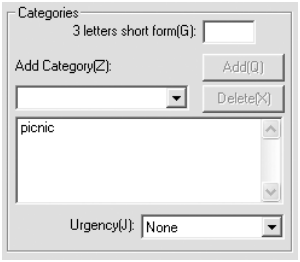


Keywords

Enter keywords as described on the preceding page.

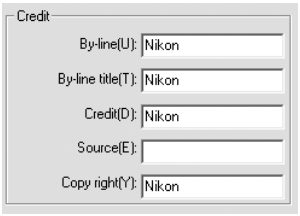
Category

Choose a category and urgency level. Categories can be created in the same manner as keywords.



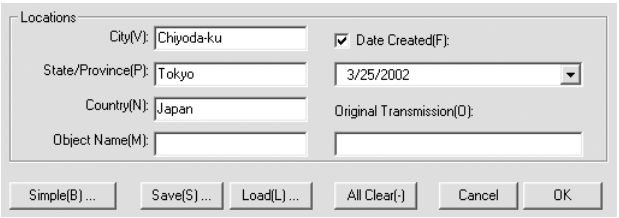
Credit

Enter information for **By-line**, **By-line title**, **Credit**, **Source**, and **Copyright**.



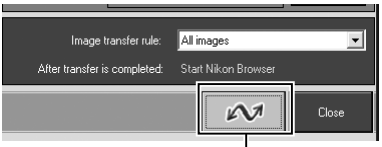
Locations

Enter information for **City**, **State/Province**, **Country**, **Object Name**, **Date Created**, and **Original Transmission**.



5 Transfer image files

Click the Transfer button to start transfer at the selected settings.



Transfer button

A progress dialog is displayed during transfer, showing a thumbnail preview of the file currently being transferred. Thumbnails will not be displayed if the **Show thumbnail** box is not checked.

During Transfer

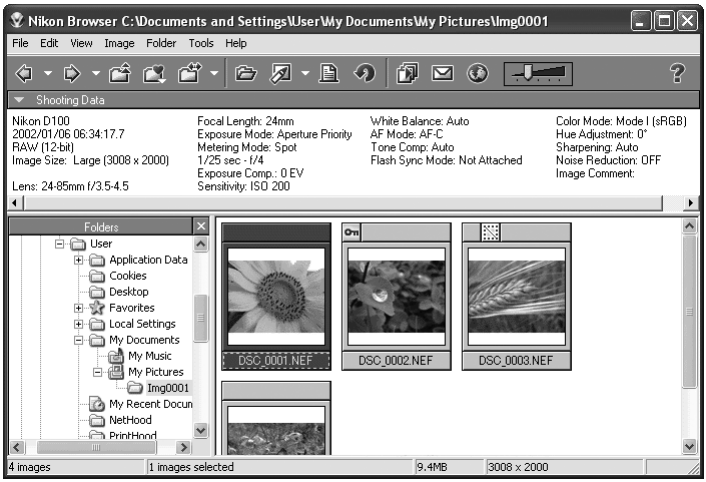
You cannot perform any other operation in Nikon View 5 while the progress dialog is displayed.

Cancelling Transfer

To cancel transfer of the image files, click **Cancel** or press Escape. When you are transferring multiple image files, the images that have already been transferred at the time transfer is cancelled are saved in the destination folder.

After Transfer

When transfer is completed, Nikon View will perform the action specified in the General tab (31) of the Transfer options. By default, transferred images will be displayed in Nikon Browser.



Nikon Browser

Browsing Pictures after Transfer

Nikon Browser is used to browse thumbnail images of the pictures and folders that have been transferred to your computer. You can also use the browser view photo information, rotate images, or display pictures automated slide shows.

This chapter is divided into the following sections:

The Nikon Browser Window
This section outlines the controls and displays in the Nikon Browser window, and describes how to start and exit Nikon Browser.

Using Nikon Browser
This section details how Nikon Browser can be used to browse files after transfer, to manage files by moving them into different folders and organizing folders into favorites, to view and print images, and how to distribute images by e-mail or upload them to the Web.

Nikon Browser Preferences
Read this section for information on fine-tuning settings for Nikon Browser and Nikon Viewer.

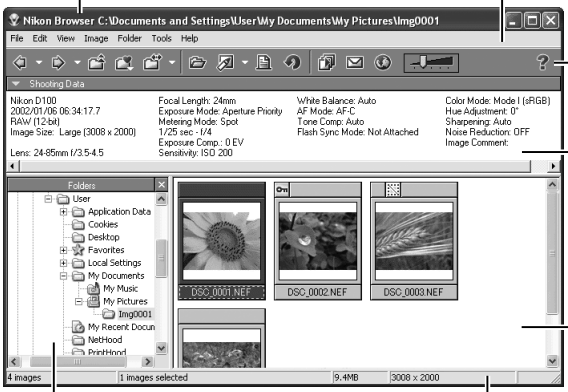
The Nikon Browser Window

Getting to Know Nikon Browser

The main parts of the Nikon Browser window are identified below.

Title bar
Displays the name of the current folder.

Menu bar
Contains commands for a variety of browser operations.



Toolbar
Contains the buttons listed in the table opposite.

Shooting data area
Displays photo information for picture currently selected in the thumbnail list (59).

Thumbnail list
The images in the current folder are displayed as small thumbnail images. (52).

Folder tree
Shows your current position in the hierarchy of volumes and folders (47).

Status bar
Displays such information as the number of pictures in the current folder and the number of items selected in the thumbnail list.

Menu Commands and Tool Buttons

Although the majority of operations can be performed using both menu commands and the buttons in the toolbar, the explanations in this manual give priority to operations performed using tool buttons.

The names and functions of the buttons in the Nikon Browser window are shown in the following table:

Button	Name	Function	
	**Back**	Return to the folder that was displayed immediately before you selected the current folder.	48
	**Forward**	Return to the folder displayed immediately before you clicked the Back button.	48
	**Up One Level**	Takes you up one level in the folder hierarchy.	48
	**Favorites**	Add the current folder to your list of favorites or select a folder from the your favorites.	50
	**Transfer Destination**	Display a list of the ten most recent destination folders for images transferred from memory cards using Nikon Transfer or captured using Nikon Capture 3 Camera Control. Choosing a folder from the list selects it in the folder tree area.	48
	**View**	View the pictures currently selected in the thumbnail list.	63
	**Edit**	Open the pictures currently selected in the thumbnail list in the application selected for editing.	67
	**Print**	Print all still images in the current selection.	71
	**Rotation**	Rotate all still images in the current selection.	58
	**Slideshow**	View the images in the current selection in an automated slideshow.	76
	**E-mail**	Append the selected images to an e-mail message.	80
	**Thumbnail slider**	Adjust the display size of thumbnails.	54
	**Publish to NikonNet or PDA**	Upload all images in the current selection to the Web (residents of the USA only) or a Pocket PC or Palm hand-held device. This button is only available in the version of Nikon View released in the Americas.	85
	**Help**	View help.	–

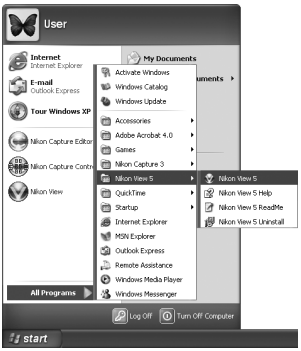
Starting Nikon Browser

Nikon Browser can be started from the **Start** menu (Windows) or by double-clicking the Nikon View application icon.

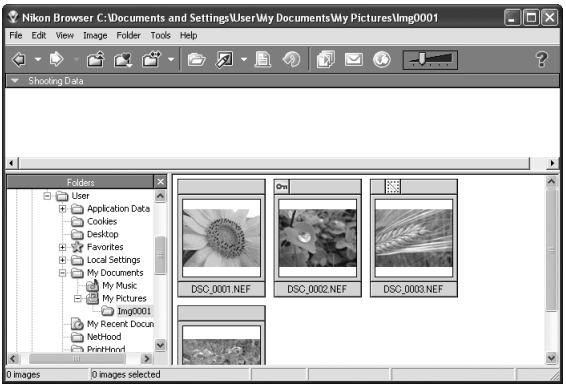
Windows

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

2 Start Nikon Browser
Select **Nikon View** from the **Start** menu (Windows XP) or **Start** > **Programs** > **Nikon View 5** > **Nikon View 5** (other Windows versions).



Nikon Browser will start.



Starting Nikon Browser from Nikon Transfer

Nikon Browser will be displayed automatically when the Nikon Transfer window closes after transfer.

Starting Nikon Browser from Nikon Capture 3 Editor

Nikon Browser can also be started by selecting **Show current folder in Nikon View** from the **Tools** menu in Nikon Capture 3 Editor.

Macintosh

1 Turn the computer on

2 Double-click the Nikon View 5 icon
Open the folder to which you installed Nikon View 5 and double-click the Nikon View 5 icon.

Serial Number

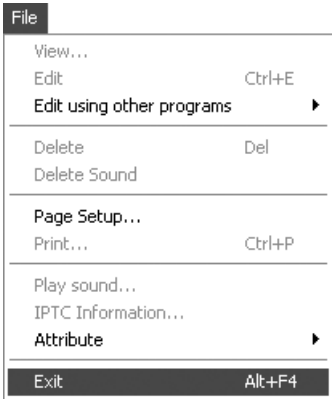
If prompted to supply a serial number when starting Nikon View 5, Nikon Capture 3 Editor, or Nikon Capture 3 Camera Control, enter the serial number for Nikon Capture 3.

Other Ways of Starting Nikon Browser

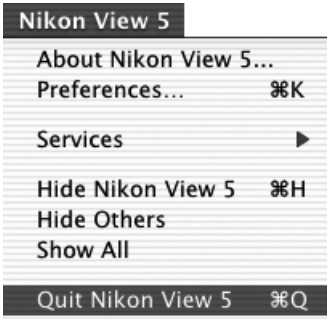
Nikon Browser can be started by double-clicking the Nikon View 5 icon in the folder to which you installed Nikon View 5 (Windows, Mac OS 9). If Nikon View 5 was added to the Dock during installation, Mac OS X users will be able to start Nikon Browser by clicking the Nikon View 5 icon in the Dock.

Exiting Nikon Capture 3 Browser

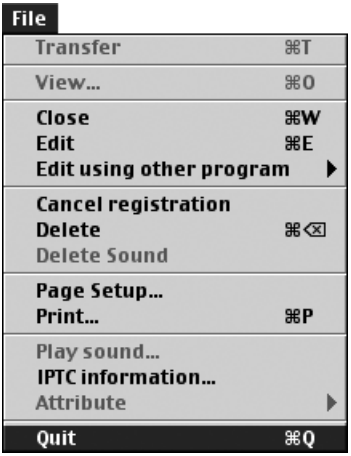
To exit Nikon Browser, open the **File** menu and select **Exit** (Windows) or **Quit** (Mac OS 9). In Mac OS X, select **Quit Nikon View 5** from the application menu.



Windows



Mac OS X



Mac OS 9

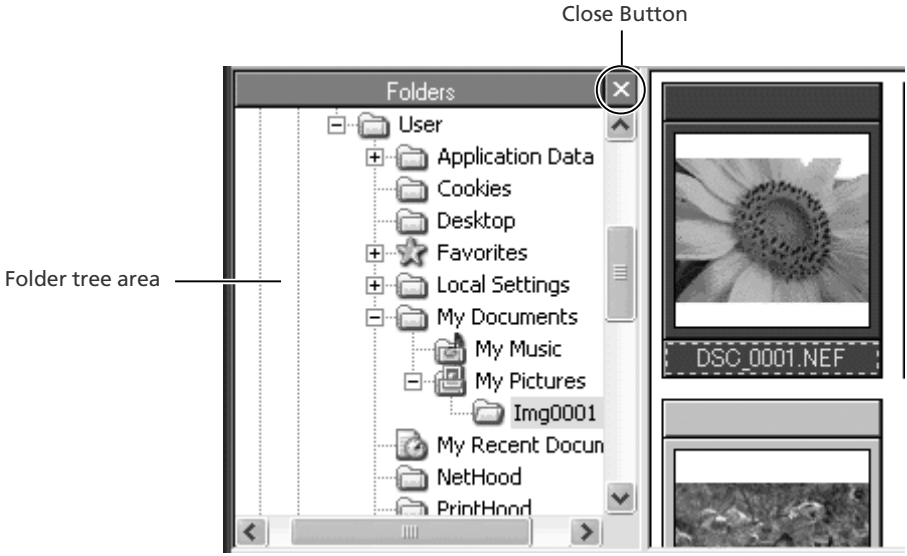
Using Nikon Browser

Browser Window Operations

Working with Folders

When you select a folder from the folder tree area, the thumbnails of image files in the folder are displayed in the thumbnail list area.

You can close the folder tree area by clicking the **Close** button in the upper right corner. To display the folder tree area again, select **View Folders** from the **View** menu.



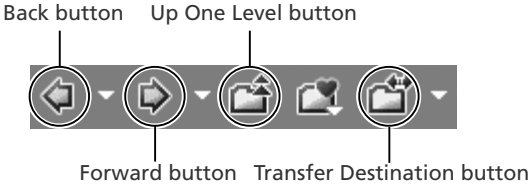
Keyboard Shortcuts

In Windows, you can select folders with the following keyboard shortcuts:

- HOME Selects the Desktop icon displayed at the root of the folder tree.
- END Selects the folder or drive displayed at the bottom of the folder tree area.
- BACKSPACE Selects the folder one level higher than the current folder in the folder tree.

Choosing a Folder

The folder tree area displays drives and folders in your computer as a tree from the desktop down. In the folder tree area, you can only select one folder at a time.



You can go back to the previous folder by clicking the Back button in the toolbar. You can also select from up to 10 previous folders by clicking the drop-down arrow on the right.

Use the Forward button to go back to where you were when you clicked the Back button. You can also select from up to 10 folders by clicking the drop-down arrow on the right.

Click the Up One Level button to select a folder one level higher than the current folder in the folder hierarchy.

Click the Transfer Destination button to view a list of 10 most recent destination folders for image files that were transferred using Nikon Transfer. When you select a folder from the list, the folder will be selected in the folder tree area.

Opening Folders in the Explorer or the Finder

In Windows, you can open a folder in Explorer by selecting a folder and choosing **Open with Explorer** from the **Folder** menu. In Macintosh, you can open a folder in Finder by selecting a folder and choosing **Open in Finder** from the **Folder** menu.

Moving Files between Folders

You can move image files by dragging and dropping thumbnails from the thumbnail list area to a folder in the folder tree area.

Drag and drop

To	Windows	Windows
Move a file to another location on the same drive	Use drag and drop	Use drag and drop
Copy a file to another location on the same drive	Press the CTRL key while dragging the file	Press the option key while dragging the file
Move a file to another drive	Press the SHIFT key while dragging the file	—
Copy a file to another drive	Use drag and drop	Use drag and drop

Creating and Deleting Folders

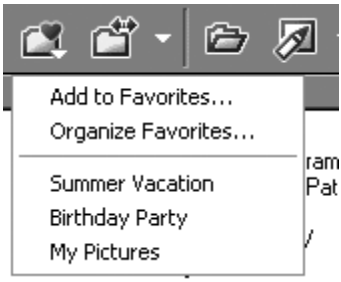
You cannot create or delete folders in the folder tree area. If a folder is created in a program other than Nikon View 5, the display of the folder tree area is refreshed when Nikon View 5 is notified by the system that a new folder was created (Windows), or when the user selects **Refresh** from the **View** menu (Macintosh).

Deleting Folders (Windows)

To delete a folder, select the folder one level higher than the folder you want to delete. The folder you want to delete will be displayed in the thumbnail list area. Select the folder, then choose **Delete** from the **File** menu.

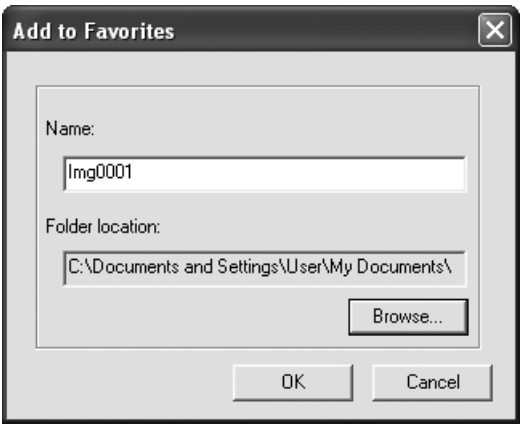
Adding Folders to Favorites

In Nikon Browser, you can add folders containing transferred images to Favorites. Folders to be added to Favorites can be selected using either the **Favorites** tool button or the **Favorites** option in the **Folder** menu. Up to 30 folders can be listed in Favorites.



The "Add to Favorites" Dialog

To add a folder to Favorites, use the folder tree area to select the desired folder, then click the Favorites button on the toolbar. You can also select **Favorites** > **Add to Favorites** from the **Folder** menu. The **Add to Favorites** dialog will be displayed.



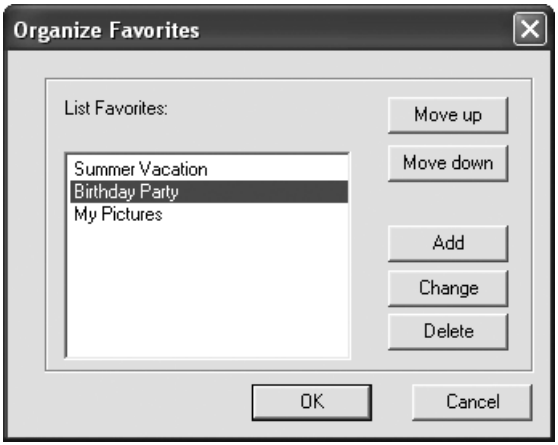
Name

Displays the name of the folder to be added to favorites.

Folder location

Displays the location of the folder to be added to favorites. If you want to specify a different folder, click **Browse...**. The name of the new folder will be displayed automatically under "Name." Click **OK** to add the selected folder to your list of favorites.

The "Organize Favorites" Dialog
To organize folders within Favorites, click the Favorites button in the toolbar, or select **Favorites** > **Organize Favorites** from the **Folder** menu. The Organize Favorites dialog will be displayed.



List Favorites
The folders that have been added to Favorites are displayed in the list.

Move up / Move down
Click to move the selected folder in up or down in the Favorites list. The folders in the **Folder** > **Favorites** sub-menu will be displayed in the specified order.

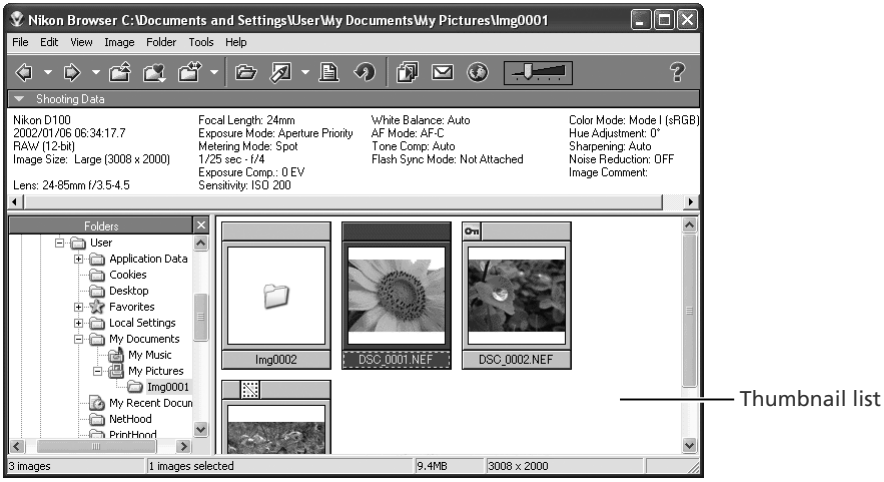
Add
Click to display the Add to Favorites dialog, where you can add folders to your Favorites.

Change
Click to display the Change Favorites dialog, where you can change the name under which folders are listed in the Favorites list without changing the name of the original folder.

Delete
Click to remove the selected folder from your list of favorites. The original folder is not deleted from your computer.

Working with Thumbnails

The thumbnail list area displays thumbnails for all images stored in the selected folder.



Note also that a folder icon is displayed in the thumbnail list area if the current folder contains sub-folders (Windows version only).

To display the contents of the folder in the thumbnail list area, select the folder icon in the thumbnail list area and click the View button on the toolbar. The folder will be selected in the folder tree area.

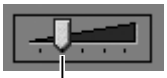
Thumbnail Display

Sometimes, a generic file icon is displayed instead of a thumbnail in the thumbnail list area. This is because some image editing programs remove the thumbnail data appended to the image file.

If this happens, check **Re-create thumbnails from actual image data** in the Thumbnails tab (97) of the Preferences dialog. This will enable Nikon View 5 to create thumbnail data from the original image. The new thumbnail will be displayed in the thumbnail list area.

Changing Thumbnail Size

The size of the thumbnails displayed in the thumbnail list can be changed using the slider in the toolbar or by selecting the desired size using the **View Size** option in the **View** menu.



Slider

The following five sizes are available:

Minimum		64 × 64 pixels
Small		96 × 96 pixels
Normal		128 × 128 pixels
Large		192 × 192 pixels
Maximum		256 × 256 pixels

Thumbnail Size

Images created with certain cameras, such as the D1, include only one thumbnail 160 × 120 pixels in size. If a larger size is selected, the existing thumbnail data will be enlarged to display at the selected size. To create a less ragged thumbnail, select **Recreate thumbnails from actual image data** in the Thumbnails tab of the Nikon View 5 Preferences dialog. This is not necessary when displaying pictures created with cameras such as the D1X, D1H, D100, E5000, and the E5700, which include larger thumbnails with the original image.

Selecting Thumbnails

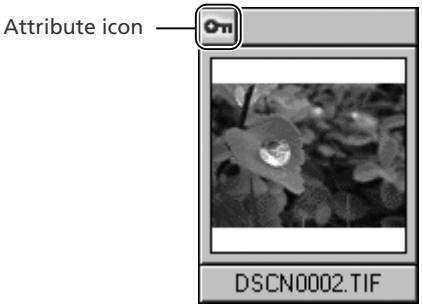
Thumbnail previews of the images in the selected folder are shown in the thumbnail list area. Click a thumbnail to select it. To select multiple thumbnails, hold down the CTRL key (Windows) or the Command key (Macintosh) while clicking on each of the thumbnails. You can also select multiple thumbnails by dragging the mouse.

Selecting Multiple Images

To select all images with the hidden (Windows only) or protected attributes, choose the appropriate option from the **Select** sub-menu in the **Edit** menu.

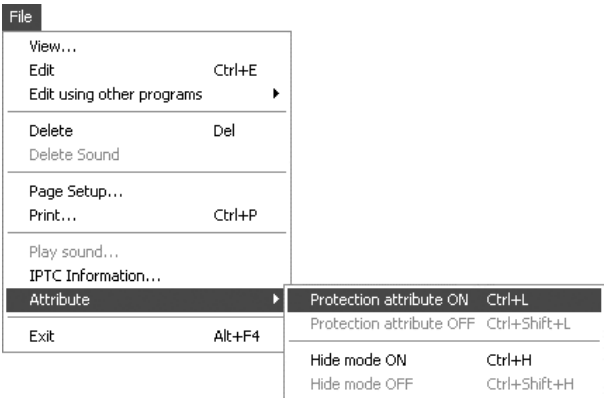
Thumbnail Attributes

Each thumbnail displayed in the thumbnail list area has an icon that represents its attributes. There are four types of icon: Protection, Hide (Windows version only), Movie, and Voice memo.



Icon	Attribute	Description
	Protection	Image is protected.
	Hide	Image is hidden and will not be displayed in Windows Explorer..
	Movie	Image is a movie.
	Voice memo	Voice memo is attached to image.

You can also protect (Windows and Macintosh) or hide (Windows only) images associated with the selected thumbnail by selecting **Attribute** from the **File** menu. Protecting an image prevents it from accidental deletion. Hiding an image prevents it from being shown in Explorer.

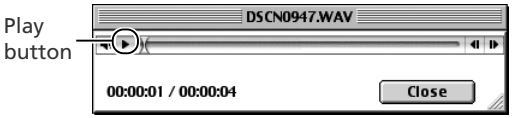


Playing Voice Memos

To play a voice memo, select an image marked with the voice memo icon, and select **Play Sound** from the **File** menu. Under Windows, the voice memo will be played back in the application specified in the Sound tab (104) of the Preferences dialog.

Windows

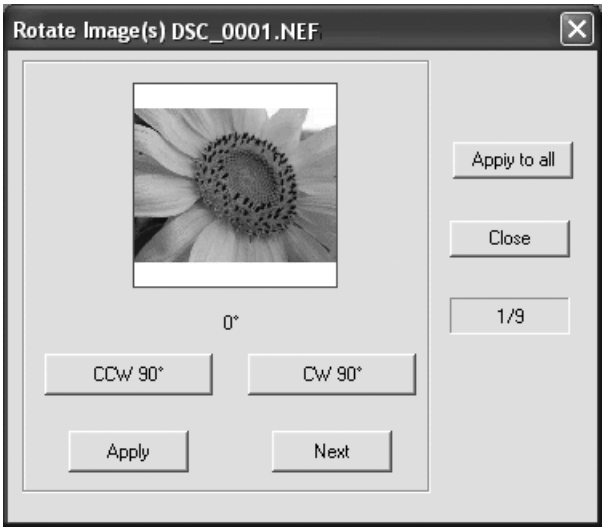
Macintosh



On a Macintosh, click the play button to start playback.

Rotating Thumbnails

In the thumbnail list area, you can rotate selected thumbnails. The rotation applied to a thumbnail is also reflected in the associated image file. Use the Rotate Image(s) dialog to rotate thumbnails. To display the Rotate Image(s) dialog, click the Rotate button on the toolbar, or select **Rotate** from the **Image** menu.



In the Rotate Image(s) dialog, click **CCW 90°** to rotate the thumbnail 90 degrees counterclockwise or **CW 90°** to rotate 90 degrees clockwise. Click the same button twice if you want to rotate the thumbnail 180 degrees. You can check the results in the preview area.

When One Thumbnail Is Selected

Click **Apply** to rotate both the thumbnail and the associated image file and then close the dialog.

When Multiple Thumbnails Are Selected

Click **Apply** to rotate both the thumbnail and the associated image file and then display the next thumbnail. To display the next thumbnail without rotating the current thumbnail, click **Next**. Click **Apply to all** to apply the orientation of the current thumbnail to all the selected thumbnails and the associated image files. Rotation is not applied to the hidden files and files that have already been rotated.

Rotating JPEG Images

Nikon Browser rotates and flips JPEG images without decompressing them first, and no drop in image quality results. We recommend that you flip or rotate JPEG images in Nikon Browser before opening them in Nikon Capture 3 Editor or another application. NEF and TIFF images do not degrade when rotated or saved.

Rotating Movies

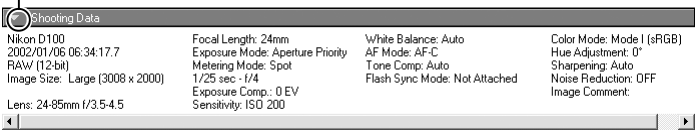
Movies cannot be rotated. If a movie file is included among the selected thumbnails, the movie file will not be displayed in the Rotate Image(s) dialog.

Displaying Shooting Data

When you select a single thumbnail, shooting data is displayed in the Shooting Data area. No shooting data is displayed if no thumbnails are selected or if multiple thumbnails are selected.

You can show or hide the shooting data by selecting **View Shooting Data** from the **View** menu. You can also expand or collapse the Shooting Data area by clicking the toggle button (a small triangle) in the upper left corner.

Toggle button



Shooting Data area expanded

Shooting Data area collapsed

The information displayed includes the following items. The information available varies according to the model of camera.

Camera Name / Date and Time / Image Quality /
Image Size / Color / Converter Lens / Lens / Focal Length /
Exposure Mode / Metering Mode / Shutter Speed, Aperture /
Exposure Compensation / Sensitivity / White Balance /
AF Mode / Tone Compensation / Flash Sync Mode /
Flash Mode / Dimmer Compensation Offset /
Electronic Zoom Scale / Saturation Control / Color Mode /
Hue Adjustment / Image Sharpening /
Noise Reduction / Image Comment /
Latitude (GPS) / Longitude (GPS) / Altitude (GPS)

Shooting Data

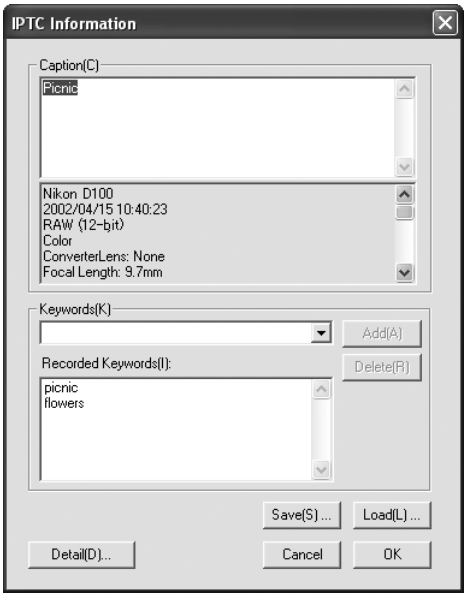
Depending on the application and the file format used, shooting data may be lost when pictures created with the camera are opened and saved from a third-party imaging application.

Viewing File Information

In Nikon Browser, you can use the IPTC Information dialog to view the file information added to an image file during transfer.

Displaying the IPTC Information Dialog

To open the IPTC Information dialog, select a thumbnail in the thumbnail list area and select **IPTC Information** (Windows) or **File Information** (Macintosh) from the **File** menu.



Simple mode

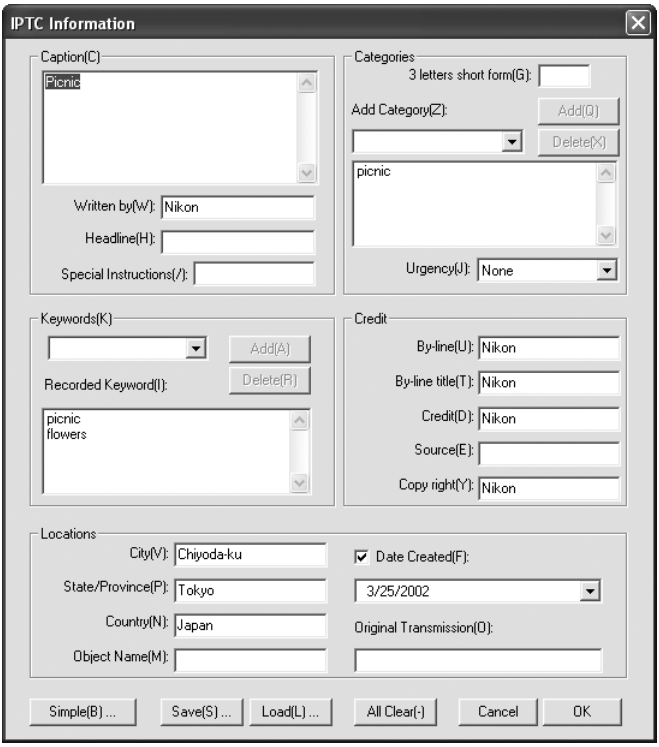
Shooting data added to the image file during transfer are displayed in the lower part of the Caption area in the IPTC Information dialog.

Adding Shooting Data to Images

Shooting data is added to the image file during transfer when **Copy Shooting data (Shutter speed etc.…) to the IPTC caption field** is checked in the Transfer tab of the Transfer options dialog (30).

You can view the IPTC Information dialog in Simple or Detail mode.

Click the **Simple.../Detail...** button to toggle between Simple and Detail modes.



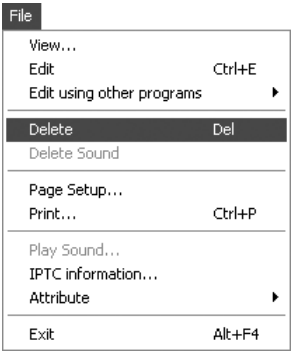
For more information on the IPTC Information dialog, see "Step 4: Add file information" in "Nikon Transfer" (35).

File Information from Nikon Browser

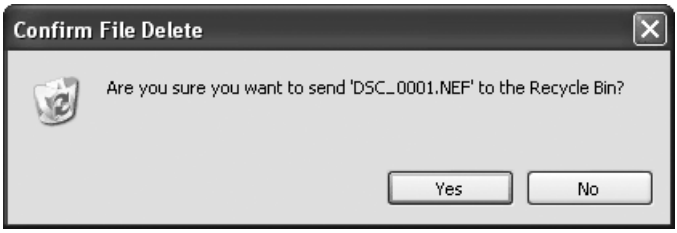
IPTC information displayed in Nikon Browser cannot be edited. Note that file information is not attached to movies.

Deleting Image Files

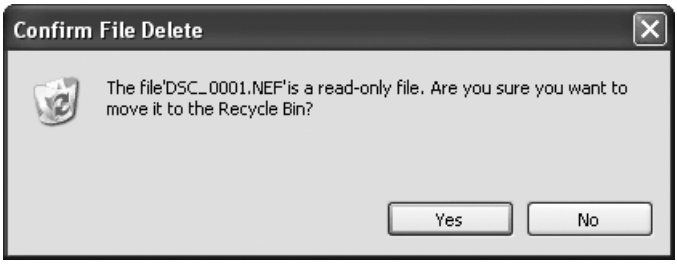
To delete image files in Nikon Browser, select the associated thumbnails in the thumbnail list area and select **Delete** from the **File** menu. You can attain the same results by pressing the DELETE key (Windows) or COMMAND + DELETE keys (Macintosh).



A confirmation dialog will be displayed. Click **Yes** to proceed with deletion.



If there are any protected images among the images selected for deletion, the dialog shown below will appear. Click **Yes** to proceed with deletion.



If a folder thumbnail is displayed in the thumbnail list area, the above operation will delete the folder and all its contents (Windows version only).

Deleted Image Files

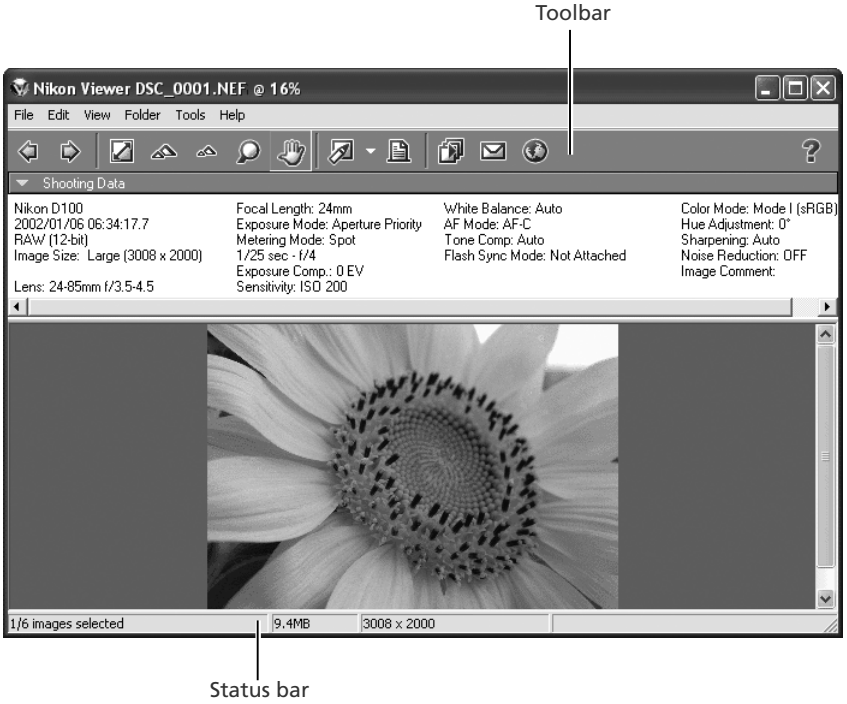
Deleted image files are moved to the Recycle Bin (Windows) or the Trash (Macintosh). To cancel the deletion, open the Recycle Bin or the Trash and return the deleted files to their original location. In Windows, if you delete image files from a memory card inserted in the camera, card slot, or card reader, or from a network folder, the image files are permanently erased and cannot be recovered.

Displaying Images

When you select a thumbnail in the thumbnail list area, still images are displayed in Nikon Viewer while movie files are played back in the program selected in the Movie Tab of the Preferences dialog (101).

Viewing Still Images

To view a still image, double click its thumbnail in the thumbnail list area. Nikon Viewer will open with the image displayed.



Other Ways to View Images

You can also open an image in Nikon Viewer by:

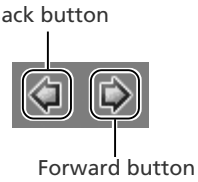
- selecting its thumbnail, and clicking the **View** button on the toolbar or selecting **View** from the **File** menu.
- selecting its thumbnail and pressing the ENTER key (Windows) or the RETURN key (Macintosh).

Displaying Images in Nikon Viewer

Images opened in Nikon Viewer can only be displayed one at a time. If multiple thumbnails are opened, only one image will be displayed. Use the Forward and Back buttons to display other images.

You can use the Nikon Viewer status bar to check the number of opened images and the status of the currently displayed image.

You can change the displayed image using the Forward and Back buttons on the toolbar of Nikon Viewer.



In Windows, even if you open only one thumbnail in the thumbnail list area, you can browse through all the still images stored in the same folder as the selected image by using the Forward and Back buttons.

Image Editing Programs

To edit a still image, select its thumbnail and click the Edit button on the toolbar or select **Edit** from the **File** menu. This will launch the image editing program selected in the "Still image" tab (99) of the Preferences dialog.

Playing Movies Back

To play back a movie, double click its thumbnail in the thumbnail list area. The application specified in the Movie tab (101) of the Preferences dialog launches and plays back the movie.

Installing QuickTime

In Windows, you cannot use Windows Media Player to play back movies recorded with the COOLPIX series digital cameras. If a movie player program is not installed, install the version of QuickTime bundled with Nikon View 5 (COOLPIX series only). For more information on installation, see the *Install Guide*.

Other Ways to Play Movies

You can also play movies back by:

- selecting its thumbnail, and clicking View button on the toolbar, or select **View** from the **File** menu.
- selecting the thumbnail and pressing the ENTER key (Windows) or the RETURN key (Macintosh).

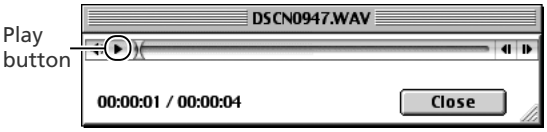
Playing Sound Files

Selecting **Play Sound** from the **File** menu when a voice memo is selected in the thumbnail area opens the selected memo for audio playback. In the Windows version of Nikon Capture 3, the application used for audio playback can be selected in the Sound tab of the Preferences dialog (104). If **Use Nikon View** is selected, playback will begin automatically.

In the Macintosh version, playback is controlled using the buttons in the window shown below.

Windows

Macintosh



On a Macintosh, click the play button to start playback.

Editing Image Files

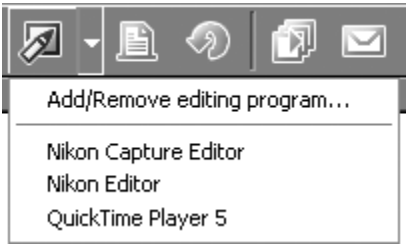
Select a thumbnail, then click the button in the toolbar, or select **Edit** from the **File** menu to display the selected image in the editing program specified in the Preferences dialog.

Edit button

The editing programs listed are those selected in the Still Image (99) and Movie tabs (127) of the Preferences dialog . If Nikon Capture 3 Editor is selected as the editor for still images, Nikon Capture 3 Editor will start (124). If you have not yet specified or registered an image editing program, the Add/Remove Editing Program dialog will appear automatically. To open the dialog on subsequent occasions, see the instructions on the next page.

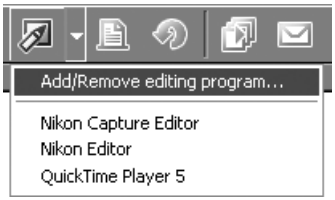
Registering Image Editing Programs

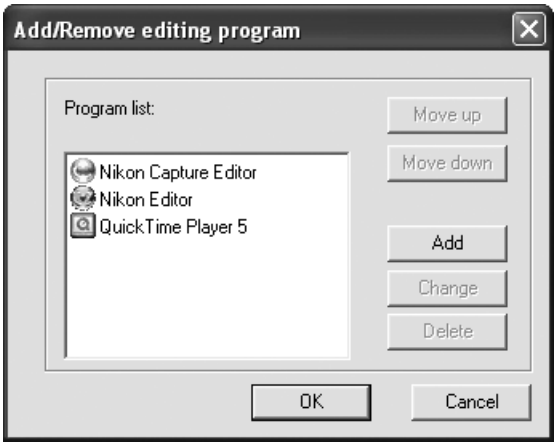
The Add/Remove Editing Program dialog is used to register (and also to remove) the image editing programs of your choice. Click **Add** to register an image editing program. Registering additional editing programs allows you to use an editing application other than the program specified in the Preferences dialog. Open registered editing programs using the Edit button pull down menu, or by selecting **Edit using other program** from in the **File** menu.



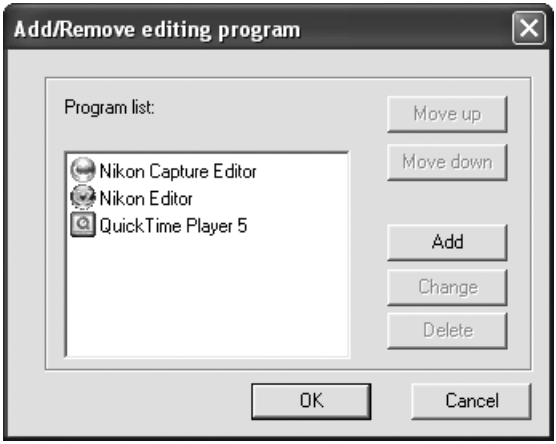
Displaying the Add/Remove Editing Program Dialog

The Edit button pull down menu (displayed by clicking the triangle to the right of the button) and the **Edit using other program** option can also be used to display the Add/Remove Editing Program dialog.





The "Add/Remove Editing Program" Dialog



Program list
The registered programs are displayed in the list.

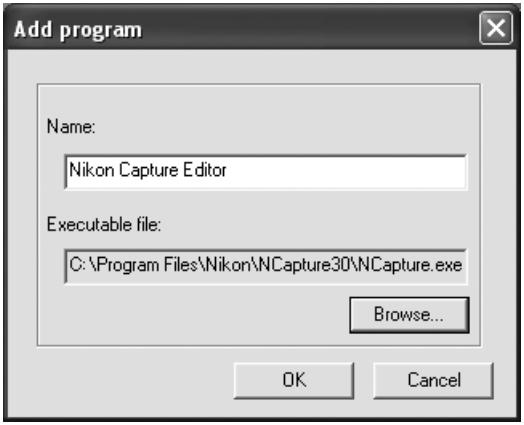
Move up / Move down
Click to move the program selected in the program list up and down. This changes the order in which programs displayed when the Edit tool button is clicked or **Edit using other programs** selected from the **File** menu.

Add
Click to display the Add Program dialog, where you can select and register programs.

Change
Click to display the Change Program dialog, where you can change the name of the registered programs.

Delete
Click to remove the selected program from the program list. Note that the program itself is not deleted.

The "Add Program" Dialog



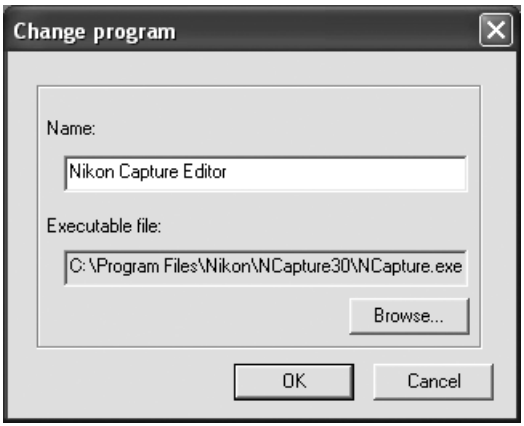
Name

You can assign a name to the program selected in "executable file" text box. The program is added to the program list with this name instead of the actual program name.

Executable file

Displays the path and file name of the program that will be added. To add a different program to the program list, click **Browse...** and select the program you want to add. Click **OK** to add the selected program to the program list.

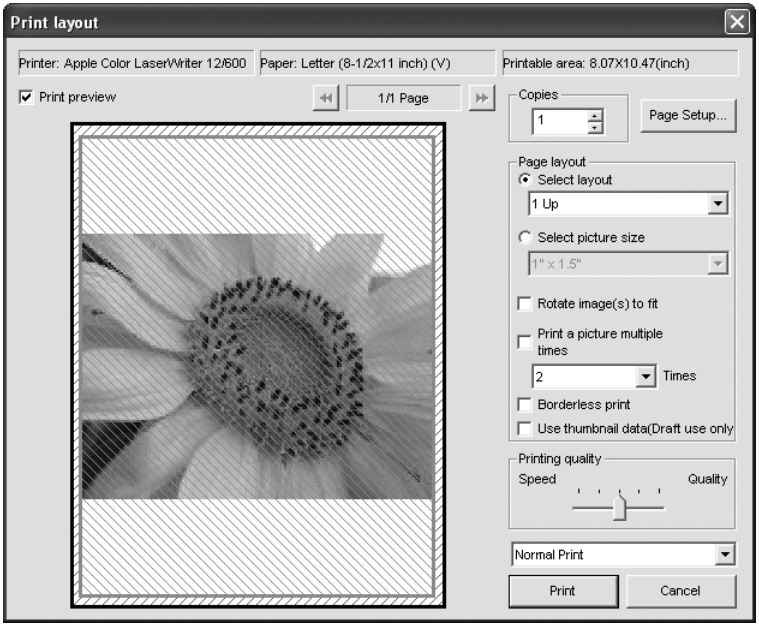
The "Change Program" Dialog



In the Change Program dialog, you can change the name of the program that appears in the Edit tool button pull down menu, and in the **Edit using other programs** sub-menu. This does not affect the name of the original program.

Printing Images

In Nikon Browser, you can print a still image by selecting the thumbnail displayed in the thumbnail list area. Use the Print Layout dialog to print a still image. To display the Print Layout dialog, select the thumbnail of the image you want to print in the thumbnail list area, then click the button on the toolbar, or select **Print** from the **File** menu. You can also print multiple still images at one time.



When you have made all the necessary settings, click **Print** to start printing. Clicking **Cancel** closes the Print Layout dialog without printing.

The Print Layout Dialog

Printer / Paper / Printable area
These text boxes display current printer settings. To change printer settings, click the **Page Setup...** button (see below).

Printer	Displays the currently selected printer.
Paper	Displays the current paper size.
Printable area	Displays the maximum dimensions of the area that can be printed per sheet at current printer and paper size settings.

Print preview
Check this option to display a preview of how the images will print on the currently selected printer.

Copies (Windows only)
Choose the number of copies that will be printed. You can print anywhere from 1 to 100 copies.

In the Macintosh version, the number of copies is not displayed in the Print Layout dialog. To specify the number of copies, click **Print**. A confirmation dialog will be displayed; click **Yes** to proceed with printing and specify the number of copies.

Page Setup...
Click to display a Printer Settings dialog in which you can modify the printer and paper settings. If you are using a Macintosh, the appearance of this dialog depends on the printer in use. The changes made are reflected in the "Printer," "Paper," and "Printable area" fields.

Page Layout
Choose from **Select layout** and **Select picture size**.

Select layout
When this option is selected, you can choose the number of images that will be printed from a drop-down menu.

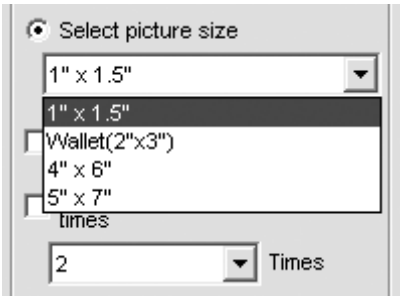
Option	Page orientation	
	Portrait	Landscape
1 Up	One image printed in center of page	One image printed in center of page
2 Up	Two pictures printed one above the other	Two pictures printed side-by-side
4 Up	Four pictures printed in two rows of two columns each	Four pictures printed in two rows of two columns each
8 Up	Eight pictures printed in four rows of two columns each	Eight pictures printed in two rows of four columns each
16 Up	Sixteen pictures printed in four rows of four columns each	Sixteen pictures printed in four rows of four columns each
25 Up	Twenty-five pictures printed in five rows of five columns each	Twenty-five pictures printed in five rows of five columns each

You can specify whether or not to print photo information (shooting data) with the image. You can also opt to print a page consisting solely of photo information by selecting **Image information list** from the pull-down menu. The size of the images are automatically adjusted according to the layout. The following information is printed when you select one of the **with image info** options or **Image information list**:

- File Name
- Camera Name
- Exposure Compensation
- Image Size (printed only when **with image info** is selected)
- Shutter Speed / Aperture
- White Balance
- Date
- Manufacturer

Select picture size

When this option is selected, you can choose print size from a drop-down list.



You can also choose whether to rotate the images and choose how many copies of the image will be printed per page.

Rotate image(s) to fit

Check this option to automatically rotate each image so as to minimize the unused space inside each image frame.

Print a picture multiple times

To print an image the desired number of times, check this option and select a number from between two and ten from the pull down menu.

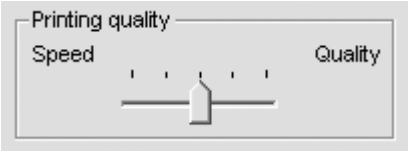
Borderless print (Windows) **/ Eliminate white border** (Macintosh)

Check this option to adjust the image size so that it fits exactly inside the red border, without leaving any white space. If the aspect ratio of the box and the image differ, part of the image may not be printed.

Use thumbnail data

Check this option to print thumbnail images.

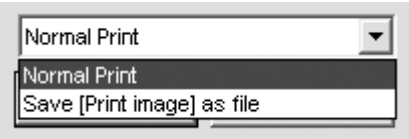
Printing quality
Use the slider to adjust the balance between speed and quality.



Speed
Dragging the slider towards **Speed** reduces printing time, but also reduces the quality of the printed image.

Quality
Dragging the slider towards **Quality** increases printing time, but also increases the quality of the printed image.

Normal Print / Save [Print Image] as file
Select whether to print images on a printer, or to save the page as a image.



Normal Print
Outputs the selected images to a printer.

Save [Print Image] as file (Windows) / Save image files (Macintosh)
Saves the page as a JPEG image using the layout specified in the Page Layout dialog. When this option is selected, the **Print** button in the Page Layout dialog will change to **Save**. Clicking the **Save** button displays the Save Image(s) dialog, where you can choose a destination folder and file name and select an Image Quality (JPEG compression) from Maximum, High, Medium or Low.

Slideshows

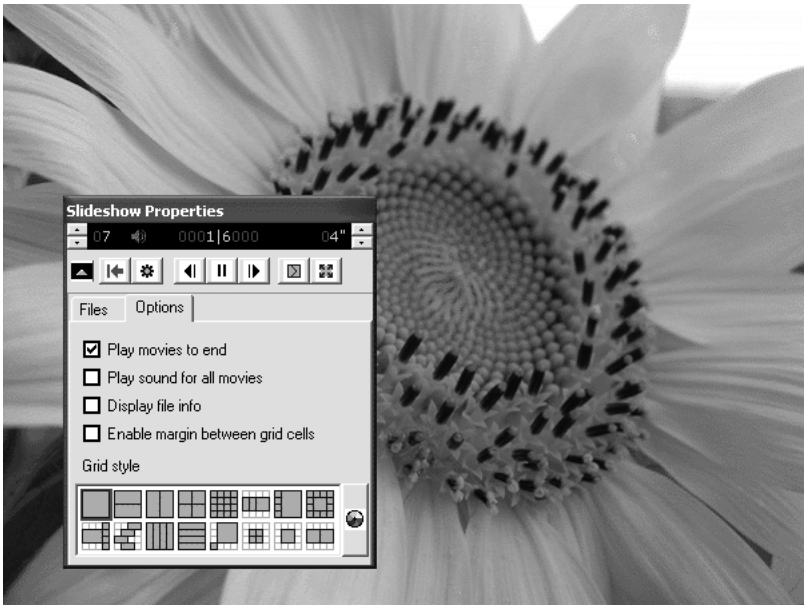
In Nikon Browser, you can view the image files associated with the selected thumbnails as a slideshow.

Displaying the Slideshow Properties Dialog

To view a slideshow, select the thumbnails of the image files you want to view in the thumbnail list area, then click the Slideshow button on the tool bar or select **Slideshow** from the **Tools** menu.

Slideshow button

The slideshow window is displayed with the Slideshow Properties dialog displayed in front of the slides. You can change the slideshow settings using this Slideshow Properties dialog.



You can show or hide the Slideshow Properties dialog by pressing the TAB key.

When a Single Thumbnail Is Selected

In Windows, if you select only one thumbnail in the thumbnail list area, all the images in the same folder are played back in the slideshow. In Mac OS, only the selected images are played back in the slideshow.

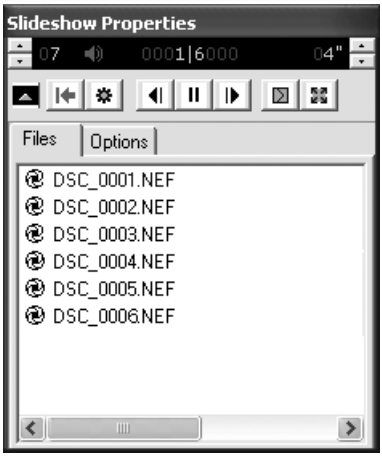
Slideshow

Slideshow technology licensed from iView Multimedia Ltd (c) 2002.

The Slideshow Properties Dialog

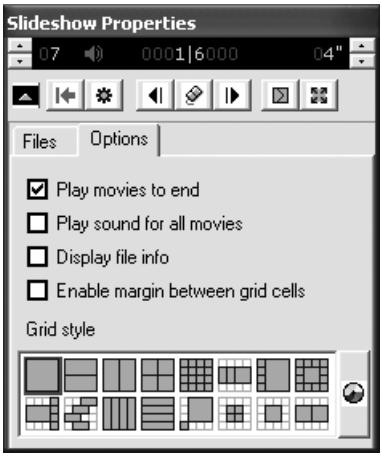
The Files Tab

Displays a list of file names (and in Windows, file paths) of the image files that are currently displayed in the slideshow.



The Options Tab

This tab controls how slides are displayed.



Play Movies to end
Check this option to play movies to the end before showing the next slide. If this option is not checked, the next slide will be shown after the specified interval whether or not the movie has finished.

Play Sound for all movies
Check this option to play back sound with all the movie files included in the slideshow.

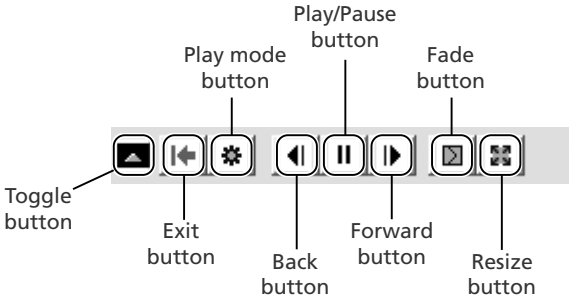
Display File Info
Check this option to display the file location, size, and zoom ratio under each slide.

Enable margin between grid cells
If you selected a stage grid option that displays multiple slides at the same time, checking this option leaves margins between slides. If this option is not checked, no margins will be displayed.

Grid style
Select the format and number of slides to display at the same time.

The Toolbar

The toolbar has buttons to control the playback of the slideshow, and buttons to specify how the slides are displayed.



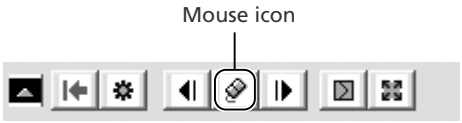
Toggle
Toggles between the slides and the options tab.

Exit
Exits the slideshow

Play mode
Use this button to specify how the slideshow will be played back. Select **Click to advance** to switch slides interactively by clicking the mouse button, **Continuous** to play the slideshow again after the last slide is displayed, or **Random** to play the slideshow in random order.

Back
Displays the previous slide.

Play / Pause
Pauses the slideshow when playing or starts it again when paused. When you select **Click to advance** using the play mode button, the button icon takes the shape of a computer mouse, on which you can click to display the next slide.



Forward
Displays the next slide.

Fade
Use this button to select how one slide fades into or out of another.

Resize
Use this button to select the zoom ratio of the slides. You can also adjust the aspect ratio, or adjust the size of the slides to fit the screen.

The Status Bar

You can control the sound volume on the status bar. You can also check the number of the remaining slides and the total number of slides, and specify the interval between slide changes, in the range of 1 to 60 seconds.

Volume control

Time display control

Changing the Size of the Slideshow Properties Dialog

You can expand or collapse the Slideshow Properties dialog by clicking the Toggle button on the toolbar.

Slideshow Properties dialog (collapsed)

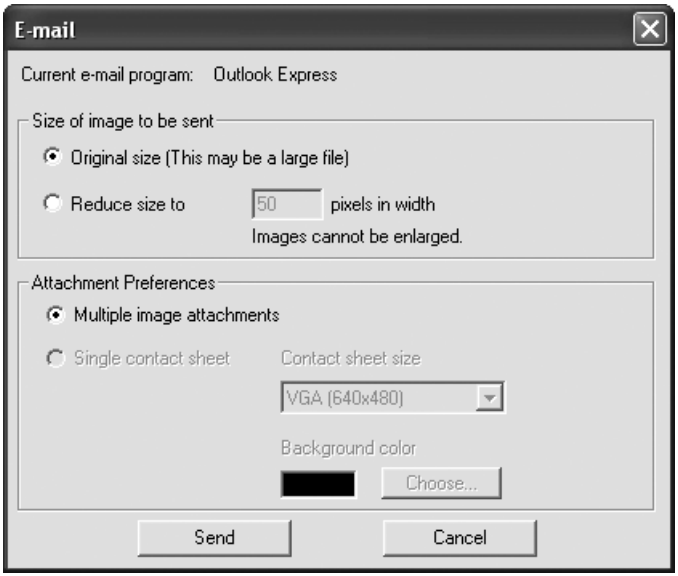
Toggle button

Sending Images by E-Mail

Images displayed in the thumbnail list area can be appended to e-mail messages. To send images, click the button in the tool bar or select **E-mail** from the **Tools** menu.

E-mail button

Settings, including the size of the image to be e-mailed, can be adjusted in the E-mail dialog.



Using E-mail

In order to use the e-mail option in Nikon View 5, your computer must be correctly configured to send e-mail. Note that you may incur charges from your Internet service provider and telephone company when you send e-mail.

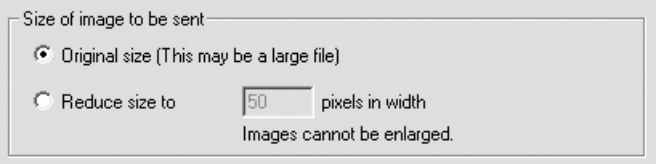
Voice Memos

Voice memos attached to Exif files can not be sent by e-mail.

Current e-mail program

When you click **Send** (see below), your e-mail will be sent using the program shown here.

Size of image to be sent



Original size

The selected image will be e-mailed "as is," without changing its size.

Reduce size to

When this option is selected, you can specify the size of the attached image in pixels. The value entered applies to the longer side of the image. The shorter side of the image is then adjusted automatically to preserve the aspect ratio. Note that the reduced size cannot be larger than the original image.

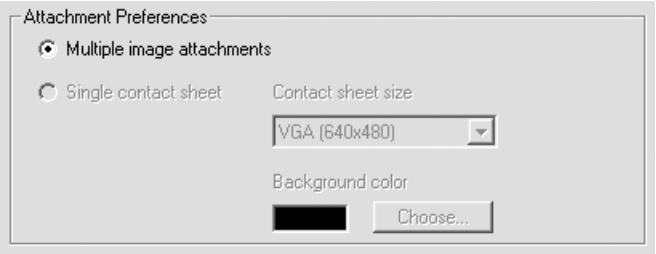
Supported E-mail Programs

The following e-mail programs are supported:

- ***Windows***
  Outlook Express, Outlook, Eudora (Eudora is not supported under Windows XP)
- ***Macintosh OS 9.0, 9.1, 9.2***
  Outlook Express, Eudora, Entourage
- ***Macintosh OS X***
  Outlook Express, Entourage X, Mail

Attachment Preferences

Specify whether multiple images will be attached as separate files or as a single file in which the images are displayed together in a "contact sheet."



Multiple image attachments

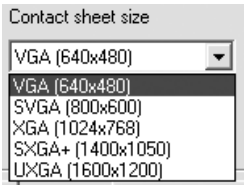
Each of the selected images will be sent as an individual attachment.

Single contact sheet

If you selected **Reduce size to** in the "Size of image to be sent" area, you can send all the selected images in a single file in which the images are displayed together in a "contact sheet." This option is not available when **Original Size** is selected.

Contact sheet size

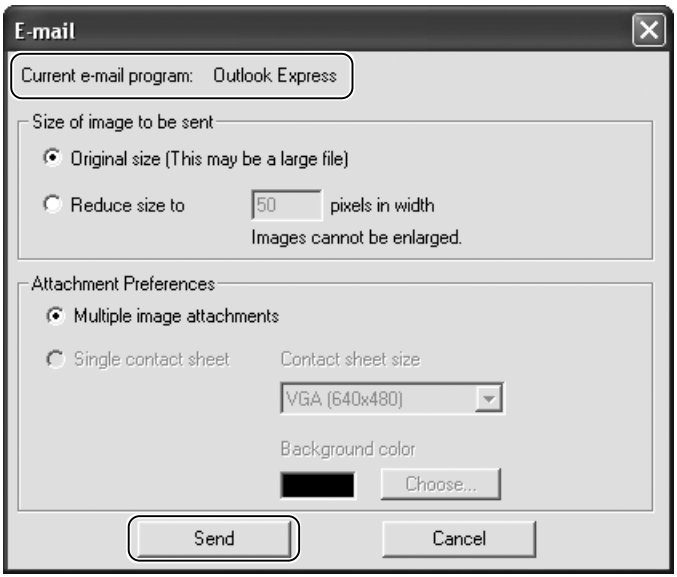
When **Single contact sheet** is selected, you can choose the size of the sheet from this menu. The following options are available: VGA (640 × 480), SVGA (800 × 600), XGA (1024 × 768), SXGA+ (1400 × 1050), UXGA (1600 × 1200).



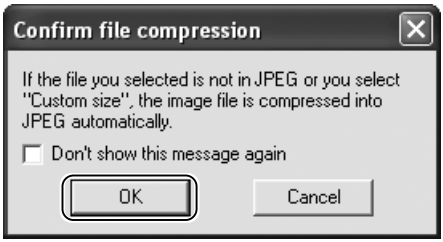
Background color

When **Single contact sheet** is selected, you can choose the background color of the contact sheet by clicking the **Choose...** button to display the system color palette.

Click **Send** to start up the application specified in the "E-mail program" field.



If you are e-mailing images at a reduced size, or if you are e-mailing images that are not in JPEG format, the dialog shown below will be displayed, informing you that the images you are sending will be converted to compressed JPEG format. Click **OK** to close the dialog and e-mail your images.



Uploading Images

Customers in some areas can use Nikon View 5 to upload still images to free on-line photo albums at Nikon-sponsored web sites. At the time of writing, this service was available to customers in the United States of America and some European countries. To use this service, American users must register with NikonNet (http://www.nikonnet.com/), European users with Nikon FotoShare (http://www.nikonfotoshare.com/). More information on on-line photo albums and other services available through NikonNet and Nikon FotoShare is provided on these web sites.

Nikon FotoShare (European Customers Only)

Customers in selected European countries can upload images using the **Nikon FotoShare** button FotoStation Easy. The FotoShare registration form appears automatically the first time FotoStation is started. You will need to supply a valid e-mail address and possibly your postal code to register for Nikon FotoShare. The entire process takes about five minutes, including waiting for a secret code to unlock your FotoShare account. If you do not want to register when you first start FotoStation Easy, you can register at a later date by selecting **Nikon FotoShare Registration** from the **Links** menu in FotoStation Easy.

You can also register for Nikon FotoShare by accessing the FotoShare web site at:
http://www.nikon-euro.com/nikoneuro1/fotoshare/registration.htm

For more information on uploading images, see the on-line help for FotoStation Easy or visit the FotoShare web site for your country or region (http://www.nikonfotoshare.com/).

Transferring Images to a Palm Organizer[1] (North, South, and Central America Only)

Nikon Browser can be used to transfer images to a Palm organizer if Palm Desk Top[2] and Photobase for Palm[2] were already installed when you installed Nikon View 5. To transfer images:

- Select **Photo Base for Palm Sync.** from the Service Choice pull-down menu in Step 3 of "Uploading Images to NikonNet." After making sure that your Palm is inserted in the cradle, and the cradle is connected correctly, click **OK**.
- To transfer the images, press the Hot Sync.® button on the cradle. Once transferred, images can be viewed on the device's screen.

You do not need to follow the rest of the steps in the Uploading image files section.

1 For instructions on synchronization, refer to the documentation provided with your hand-held device
2 For instructions on installing and using this application, refer to the software documentation.

Hot Sync

Hot Sync is a registered trademark of Palm Inc.

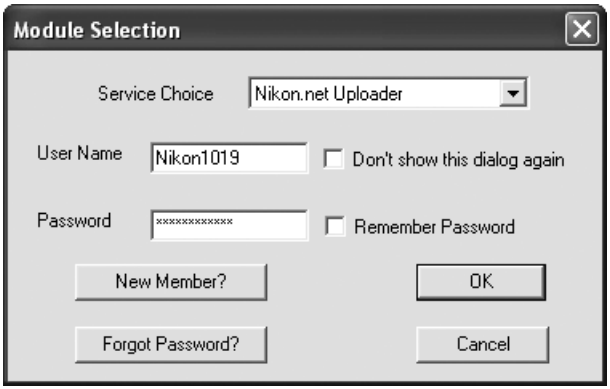
Uploading Images to NikonNet (American Customers Only)

1 Select images for upload
In the thumbnail list area, select one or more image file thumbnails to upload.

2 Click
Click the button in the Nikon Browser toolbar, or select **Publish to NikonNet or PDA** from the **Tools** menu.

Publish to NikonNet or PDA button

3 Choose whether to upload images to NikonNet or a hand-held device
If a hand-held device (PDA) is connected to your computer, the Module Selection dialog will be displayed. If there are no hand-held devices connected to your computer, proceed to Step 4.



To upload images to NikonNet, select **Nikon.net Uploader** from the Service Choice pull-down menu, enter your NikonNet user name and password, and click **OK**. For more information on transferring images to a hand-held device, see the notes on these pages. Additional information on the options available in the Module Selection dialog is provided in "The Module Selection Dialog" (88).

Transferring Images to a Pocket PC[1] (Windows Only; Not Available Outside the Americas)

Nikon Browser can be used to transfer images to a Pocket PC if Active Sync.[2] and Photobase for Pocket PC[2] were already installed when you installed Nikon View 5. To transfer images:

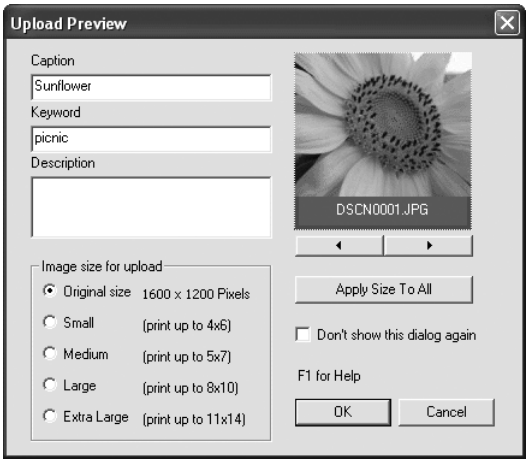
- Select **Photo Base for Pocket PC** from the Service Choice pull-down menu in Step 3 of "Uploading Images to NikonNet." After making sure that your Pocket PC is connected correctly, click **OK**.
- Use Microsoft Active Sync to transfer the images to your Pocket PC. Once transferred, images can be viewed on the device's screen.

You do not need to follow the rest of the steps in the Uploading image files section.

1 For instructions on synchronization, refer to the documentation provided with your hand-held device
2 For instructions on installing and using this application, refer to the software documentation.

4 Choose upload options

The Upload Preview dialog will be displayed. After adding information to the image files or resizing the images, click **OK** to continue. For more information, see "The Upload Preview Dialog" (90).



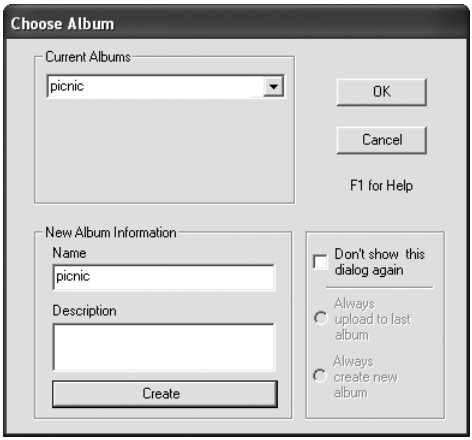
If the Module Selection dialog was not displayed in Step 3, the NikonNet User Information dialog will appear prompting you to enter your NikonNet user name and password.

Publishing to NikonNet

An Internet connection is required to publish your images to NikonNet. Note that telephone charges and fees charged by your Internet Service Provider (ISP) may apply. When registering for NikonNet, you must have an address in the USA with a valid Zip code.

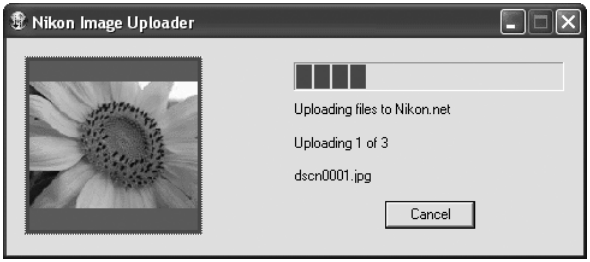
5 Choose an album

In the Choose Album dialog, select the album to add the images to, or create a new album. For more information, see "The Choose Album Dialog" (92).



6 Click **OK**

The images will be uploaded to the selected album.



RAW (NEF) and TIFF Images

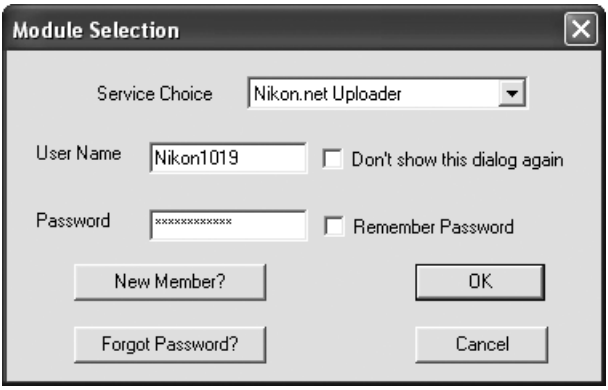
RAW (NEF) and TIFF images are converted to JPEG before upload.

Uploader Dialogs (North, South, and Central America Only)

This section describes options available in the dialogs displayed when you upload images to NikonNet using the Upload to NikonNet or PDA option in Nikon Browser. This option is available only in the Americas.

The Module Selection Dialog

This dialog is where you choose whether to upload images to NikonNet or to a hand-held device. This dialog is not displayed if a hand-held device is not currently connected to your computer.



Click **OK** to close this dialog and upload the selected images. Click **Cancel** to exit without uploading the selected images.

Service Choice
Choose **Nikon.net Uploader** to upload images to an on-line photo album on NikonNet (this service is restricted to customers in the USA). If you have installed Palm Desk Top and Photobase for Palm, you can also choose **Photo Base for Palm Sync.** to upload images to your Palm organizer (84). If Active Sync. and Photobase for Pocket PC are installed on your computer, you can upload images to a Pocket PC using the **Photo Base for Pocket PC** option (85).

User Name
If you selected **Nikon.net Uploader** from the Service Choice menu, enter your NikonNet user name in this text box.

Don't show this dialog again
Check this option to skip the Module Selection dialog the next time you upload images. To display the dialog again, click **Clear** in the Publish to NikonNet or PDA tab of the Preferences dialog (106).

Password
If you selected **Nikon.net Uploader** from the Service Choice menu, enter your NikonNet password in this text box.

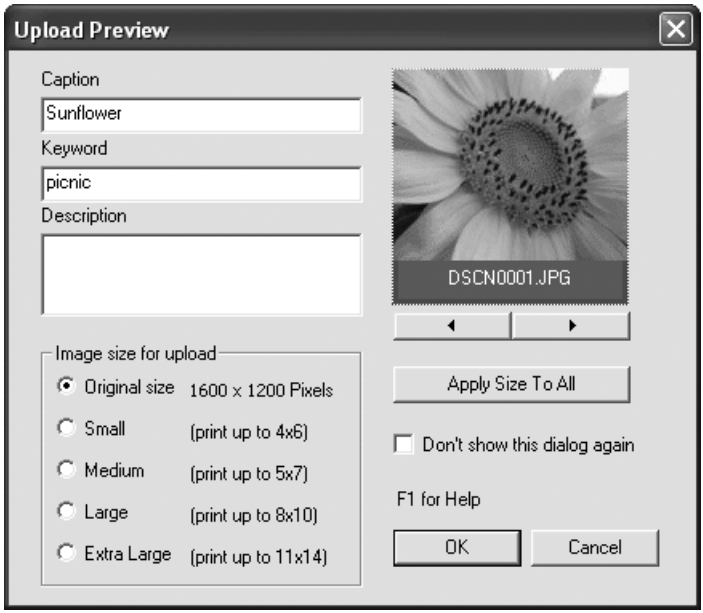
Remember Password
If this option is checked, your password will automatically be entered for you the next time the Module Selection dialog is displayed.

New Member?
Click to display the NikonNet user registration page in your Web browser. If you are not yet a member, click this button to register.

Forgot Password?
Click to display the NikonNet password assistance page in your Web browser. If you forget your password, click this button and supply the necessary information.

The Upload Preview Dialog

In the Upload Preview dialog, you can resize the images uploaded to the album and add a caption, keywords, and description.



When multiple images are selected for upload, you can use the buttons under the preview to display additional images. Click **OK** to close this dialog and upload the selected images at the specified settings. Click **Cancel** to exit without uploading the selected images.

Caption
Enter a caption for the image currently displayed in the preview area. The caption will appear in the on-line album.

Keyword
Enter keywords for the image currently displayed in the preview area. The keywords will appear in the My Pictures section.

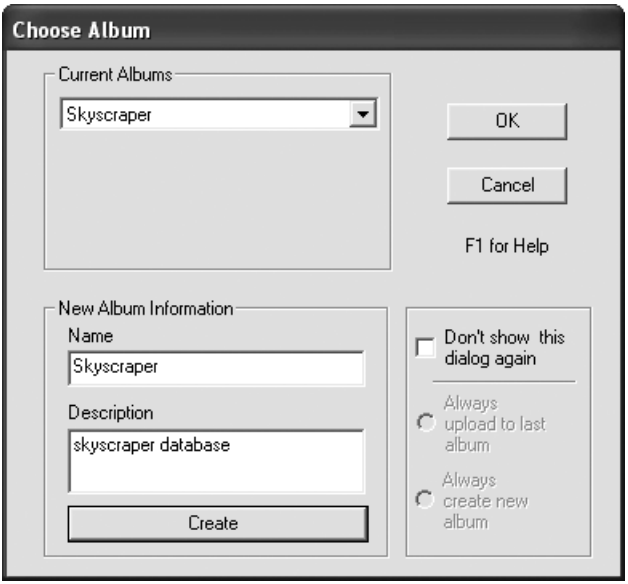
Description
Enter a description for the image currently displayed in the preview area. The description will appear in the on-line album.

Image size for upload
Images will be uploaded to the on-line album at the size specified. You cannot select a size larger than the original size. When uploading multiple images, you can specify the upload size separately for each image or apply the selected size to all images using the **Apply Size To All** button.

Don't show this dialog again
Check this option to skip the Upload Preview dialog the next time you upload images. To display the dialog again, click **Clear** in the Publish to NikonNet or PDA tab of the Preferences dialog (106).

The Choose Album Dialog

In the Choose Album dialog, you can select the on-line photo album to which images will be uploaded, or create a new album for the uploaded files.



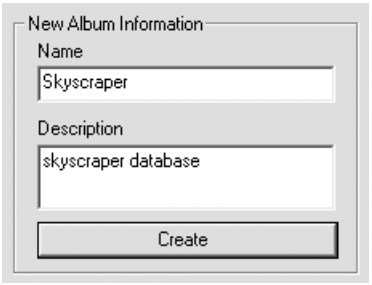
Click **OK** to close this dialog and upload the selected images to the album selected under Current Albums. Click **Cancel** to exit without uploading the selected images.

Current Albums

Select the destination album from the drop-down menu. The selected images will be uploaded to this album when you click **OK**.

New Album Information

To create a new album, enter a name and description for the album in the Name and Description text boxes and click **Create**. The new album will be added to the list of current albums.



Don't show this dialog again

Check this option to skip the Choose Album dialog the next time you upload images. When this option is selected, you must choose whether images will be automatically uploaded to the last album selected in the Current Albums menu or to a new album created automatically when the images are uploaded. To display the Choose Album dialog again, click **Clear** in the Publish to NikonNet or PDA tab of the Preferences dialog (106).

Always upload to last album

Select this option to always upload the files to the most recently used album.

Always create new album

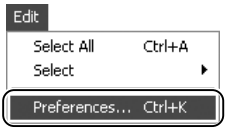
Select this option to create a new album every time you upload the image files.

Nikon Browser Preferences

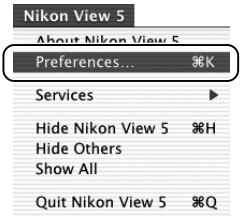
Fine-Tuning Nikon Browser

Displaying the Preferences Dialog

To view the Preferences dialog, select **Preferences...** from the **Edit** menu (Windows or Mac OS 9) or application (Mac OS X) menu.



Windows/Mac OS 9



Mac OS X

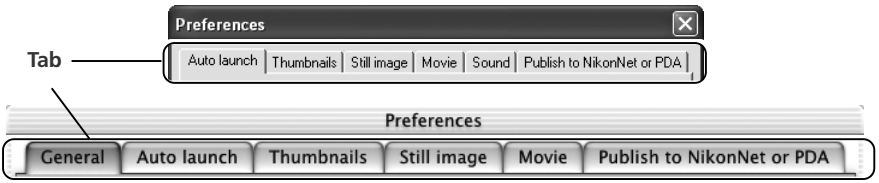
The Preferences dialog contains the following seven tabs:

Tab	Description	
General (Macintosh only)	Choose the volume used for temporary storage.	95
Auto Launch	Choose whether Nikon Transfer starts automatically when a memory card from a supported camera is detected.	96
Thumbnails	Choose whether to create thumbnails from the original image data.	97
Still image	Choose the applications that will be used to play back or edit still images.	99
Movie	Choose the applications that will be used to play back or edit movies.	101
Sound (Windows only)	Choose the application that will be used to play back voice memos.	104
Publish to NikonNet or PDA (Americas only)	Options for uploading images.	106

After making changes to preferences, click **OK** to save changes and return to the Nikon Browser window. Click **Cancel** to cancel any changes to settings and return to the Nikon Browser window.

Viewing Preferences

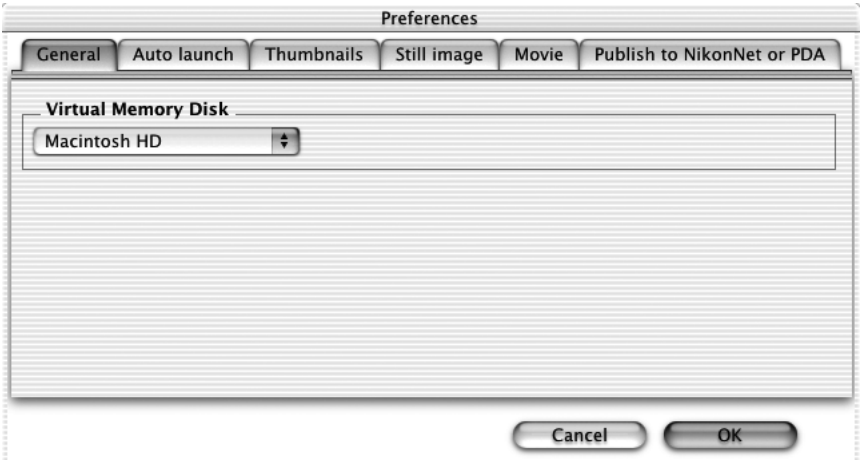
To view settings in any of the seven panes, click the appropriate tab.



The General Tab (Macintosh Only)

Virtual Memory Disk

Choose the volume used for storage of temporary data, including as image cache data, from the pull-down menu. The default volume for temporary storage is the System volume.

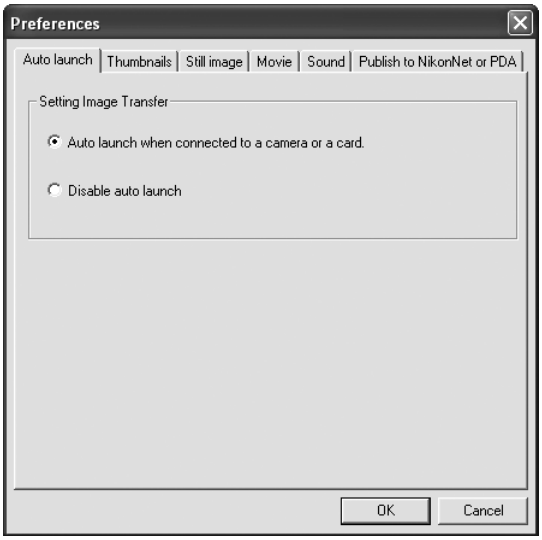


The General Tab

Changes to settings in the General tab also apply to Nikon Capture 3 Editor and Nikon Capture 3 Camera Control. Nikon View 5 must be restarted before changes to settings will take effect.

The Auto Launch Tab

The options in the Auto Launch tab controls whether Nikon Transfer will launch automatically.



Auto launch when connected to a camera or a card

Select this option to launch Nikon View 5 automatically when you turn the camera on and connect it to your computer or when you insert the memory card into the card reader or card slot. When Nikon View 5 launches, the Nikon Transfer window will open.

Disable auto launch

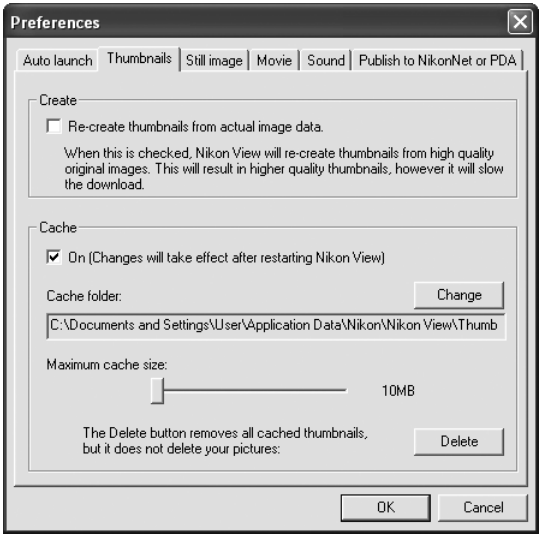
Select this option if you do not want Nikon Transfer to launch automatically when a camera is connected or a memory card is inserted.

The Disable Auto Launch Option in Windows XP

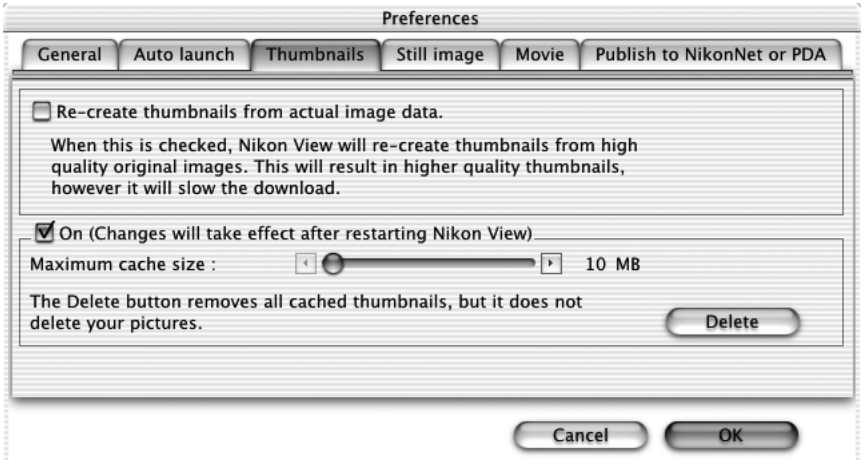
In Windows XP, the **Disable auto launch** option is effective only with the D1/D1x/D1h and COOLPIX990/880 cameras. When other cameras are connected, the **Disable auto launch** option is ignored and Nikon Transfer launches automatically.

The Thumbnails Tab

The Thumbnails tab contains options that determine how the thumbnails displayed in the Nikon Browser thumbnail list area are created.



Windows



Macintosh

Create

Re-create thumbnails from actual image data

Check this option to create a high-resolution thumbnail from an image file and display the thumbnail in the Nikon Browser thumbnail list. Note that this will increase the amount of time needed to display thumbnails.

If this option is not selected, there will be some cases when the operating system's generic file icons appear in the thumbnail list area, instead of actual thumbnails. If generic file icons are displayed, click the check box to create thumbnails.

Cache

On

If this option is checked, thumbnails that have already been displayed in Nikon Browser will be re-created from the cache data, decreasing the amount of time needed to display thumbnails.

Cache folder

The cache folder field specifies the location to which cache files will be saved. To change the location, click **Change...**.

Maximum cache size slider

Use the slider to set the maximum size of the cache file. The maximum size can be set in the range of 10 MB to 100MB, at 10 MB intervals. If you reduce the maximum cache size, the current cache data will be deleted (Windows only).

Delete

Click this button to delete all cached thumbnails. The original images associated with the thumbnails will not be affected.

Cache Settings

Changes to cache settings will not take effect until Nikon Browser is restarted.

The Still Image Tab

The "Still image" is used to choose the default program for editing still images. The specified program will launch when you select **Edit** from the **File** menu in Nikon Browser or Nikon Viewer.

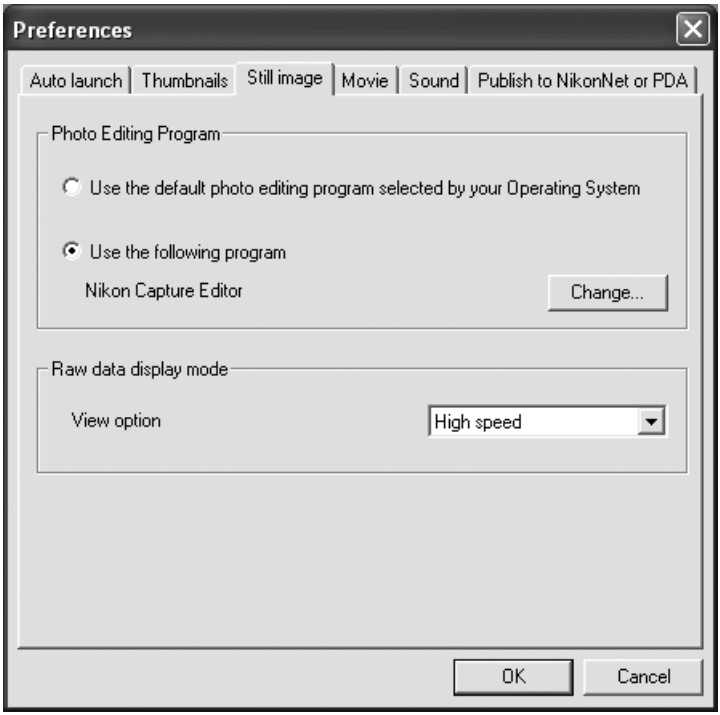


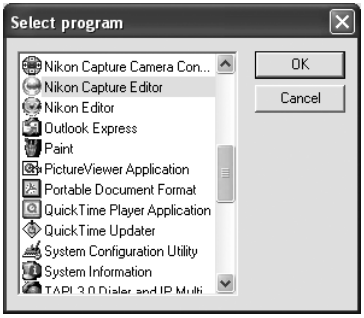
Photo Editing Program

Use the default photo editing program selected by your Operating System

Select this option to edit images in the default image editing program for your operating system.

Use the following program

Select this option to edit images in the image editing program of your choice. To choose a program, click **Change...** and select the program from the Select Program dialog.



Windows

Macintosh

The name of the selected application is displayed under **Use the following program**.

RAW data display mode

Select how NEF image files will be displayed. You can choose from **High speed** and **High quality**.

High quality

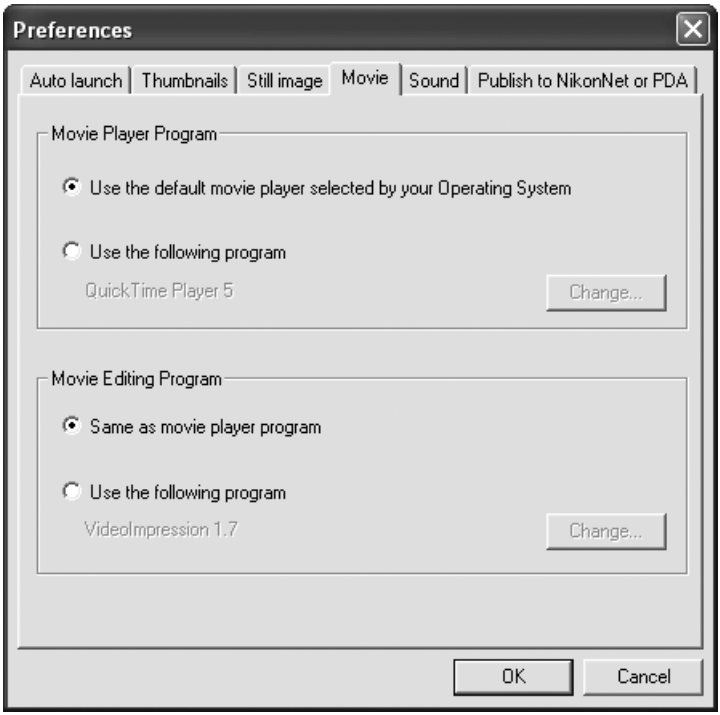
Choose this option to maximize image quality when images are viewed in close up. The time taken to display images will increase.

High speed

Choose this option to reduce the time that it takes to display RAW images. Note that image resolution will decrease, and images may appear grainy when zoomed in.

The Movie Tab

The Movie tab is used to select the applications used to view and edit movies.



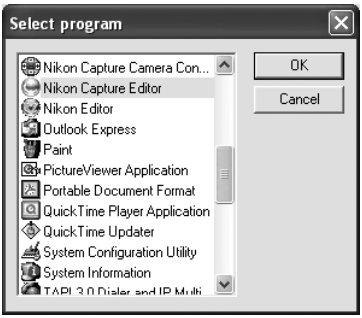
Movie Player Program

Use the default movie player selected by your Operating System

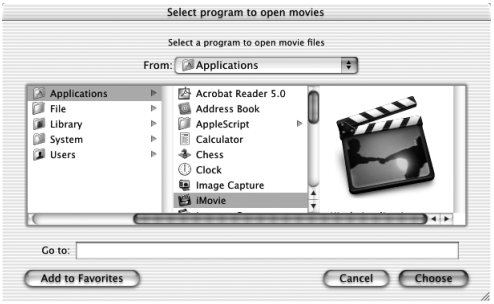
Select this option to view movies in the default movie player for your operating system.

Use the following program

Select this option to view movies in the application of your choice. To choose a program, click **Change...** and select the program from the Select Program dialog.



Windows



Macintosh

The name of the selected application is displayed under **Use the following program**.

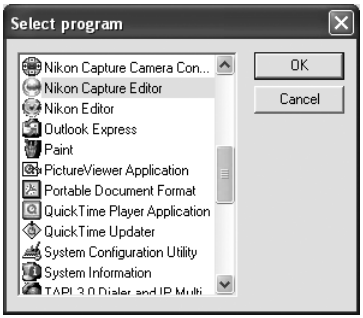
Movie Editing Program

Same as movie player program

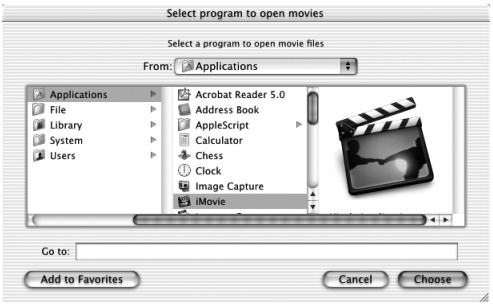
Select this option to edit movies using the program selected in the Movie Player Program area.

Use the following program

Select this option to edit movies in the application of your choice. To choose a program, click **Change...** and select the program from the Select Program dialog.



Windows

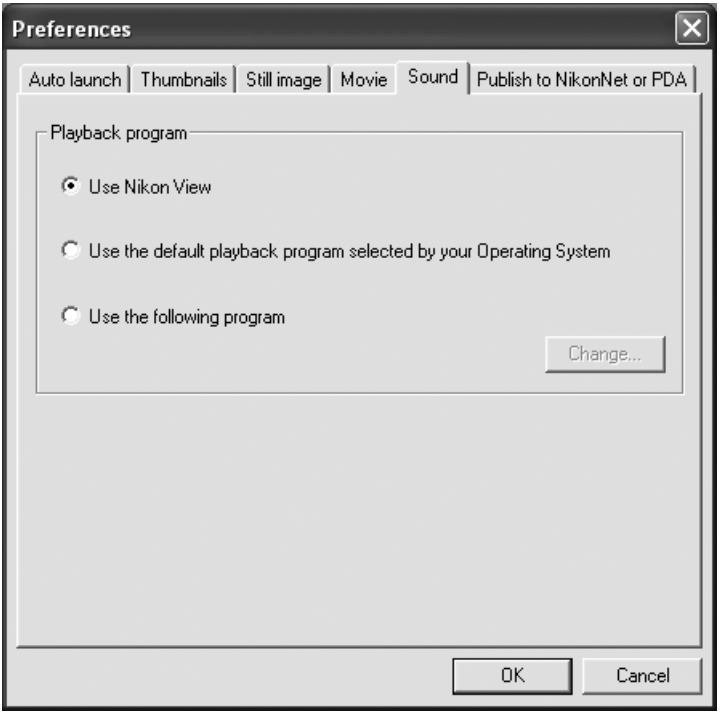


Macintosh

The name of the selected application is displayed under **Use the following program**.

The Sound Tab (Windows Only)

Use the Sound tab to choose the application that will be used to play back voice memos when image files containing a voice memo are selected in Nikon Browser.



Playback program

Use Nikon View

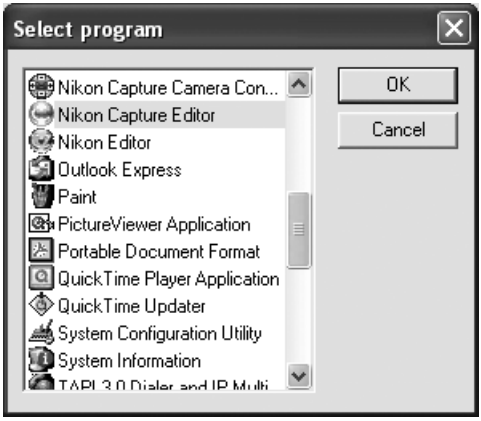
Voice memos will be played back in Nikon View.

Use the default playback program selected by your Operating System

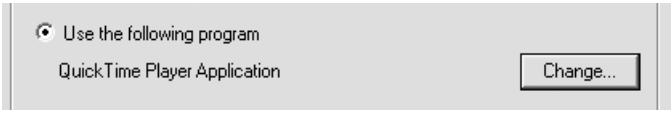
Select this option to play voice memos in the default audio player for your operating system.

Use the following program

Select this option to play voice memos in the application of your choice. To choose a program, click **Change...** and select the program from the Select Program dialog.

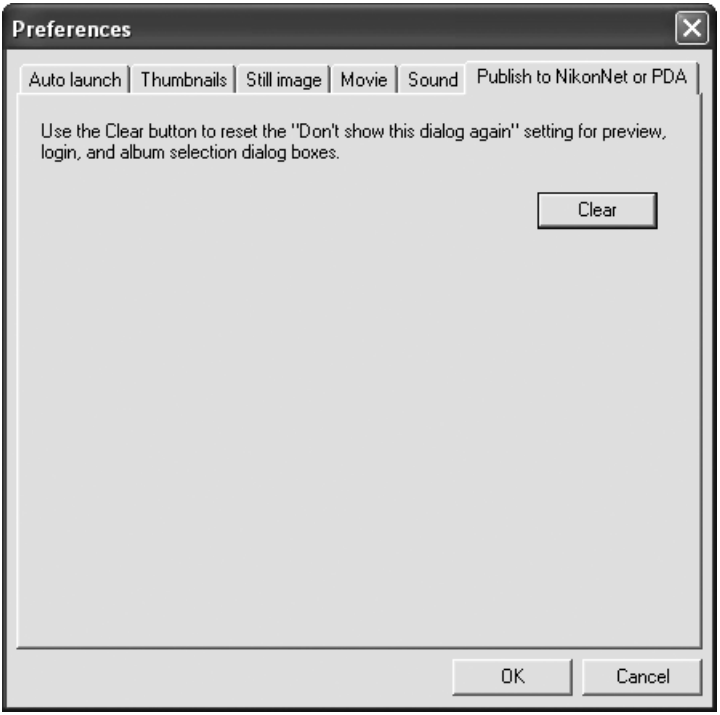


The name of the selected application is displayed under **Use the following program**.



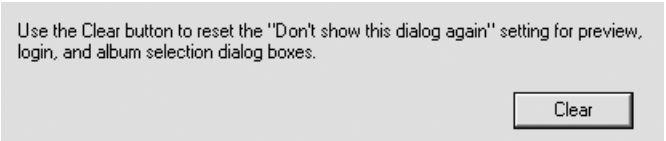
The Publish to NikonNet or PDA Tab (Americas Only)

The Publish to NikonNet tab is used to display the Module Selection, Nikon User Information, Upload Preview, and Choose Album dialogs after choosing **Don't show this dialog again** during upload to NikonNet. This panel is displayed only in version of Nikon View 5 released to North, South, and Central America.



Clear

Click to clear the **Don't show this dialog again** check boxes in the Module Selection, Nikon User Information, Upload Preview, and Choose Album dialogs.



Nikon Viewer

Viewing Pictures

Nikon Viewer is used to view still pictures selected in Nikon Browser. Pictures can be zoomed in or out and scrolled, allowing you to take a closer look at specific parts of the image.

This chapter is divided into the following sections:

The Nikon Viewer Window
This section outlines the controls and displays in the Nikon Viewer window, and describes how to start and exit Nikon Viewer.

Using Nikon Viewer
This section details how Nikon Viewer can be used to view images.

Nikon Viewer Preferences
Read this section for an overview of the Nikon Viewer Preferences dialog. Details can be found in "Nikon Browser: Preferences" (94).

The Nikon Viewer Window

Getting to Know Nikon Viewer

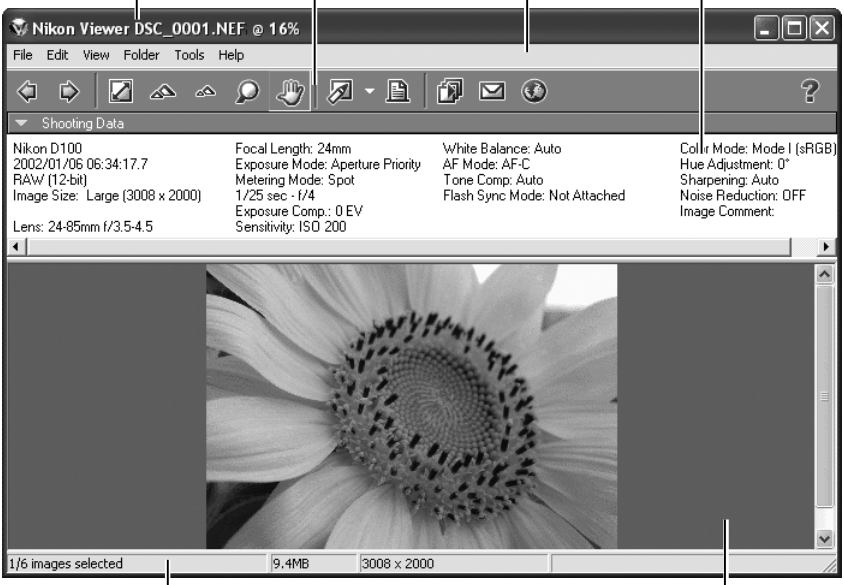
The main parts of the Nikon Viewer window are identified below.

Title Bar
Lists the name of the currently image and the zoom ratio at which it is displayed.

Menu bar
Contains menu commands for the various operations that can be performed in Nikon Viewer.

Toolbar
Contains buttons for performing various operations (see opposite).

Shooting data area
Displays photo information for current image (117).



Status bar
Lists such information as the number of pictures currently open in Nikon Viewer, the position of the current image among them, and the file size of the current image.

View area
The image is displayed in this area.

Menu Commands and Tool Buttons

Although many operations can be performed using both menu commands and the buttons in the toolbar, the explanations in this manual give priority to operations performed using tool buttons.

The names and functions of the buttons in the Nikon Viewer window are shown in the following table:

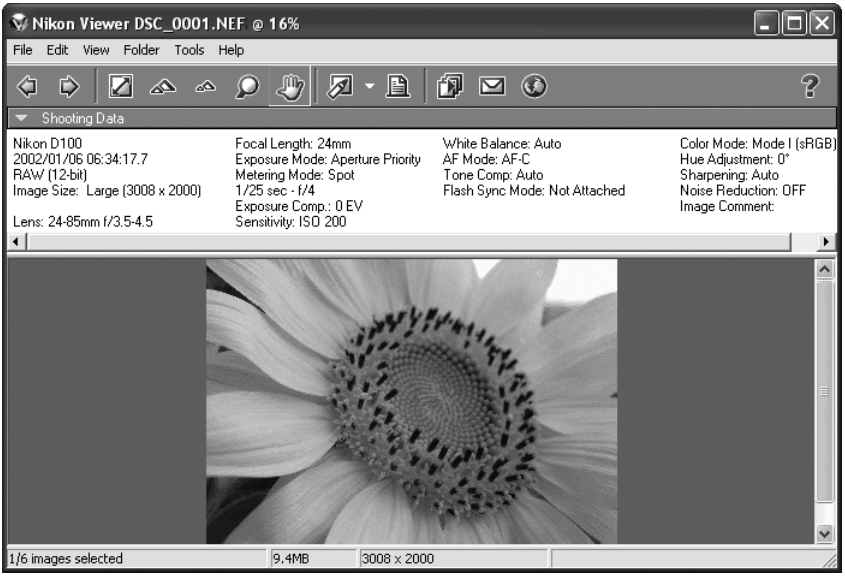
Button	Name	Function	
	**Previous Image Selected**	If the current image is not the first or only image currently opened in Nikon Viewer, clicking this button will displays the previous image.	112
	**Next Image Selected**	If the current image is not the last or only image currently opened in Nikon Viewer, clicking this button will displays the next image.	112
	**Fit Image to Window**	Displays the current image at a zoom ratio that allows the entire image to be viewed.	113
	**Zoom In**	Zooms in on the current image.	113
	**Zoom Out**	Zooms out from the current image.	113
	**Zoom Cursor**	The cursor takes the shape of a magnifying glass, allowing you to zoom the current image in or out using the mouse.	114
	**Hand Tool**	The cursor takes the shape of a hand, allowing you to scroll the current image using the mouse.	114
	**Edit**	Opens the current image in the designated image editing program.	115
	**Print**	Prints the current image	115
	**Slideshow**	The images currently opened in Nikon Viewer are displayed in an automated slideshow.	116
	**E-mail**	Append the current image to an e-mail message.	116
	**Publish to NikonNet or PDA**	Upload all images in the current selection to the Web (residents of the USA only) or a Pocket PC or Palm hand-held device. This button is only available in the version of Nikon View released in the Americas.	116
	**Help**	View help.	–

Starting Nikon Viewer

Nikon Viewer is started from Nikon Browser.

1 **Select images**
Select the still images you wish to view from the thumbnail list in Nikon Browser.

2 **Click**
Click the (View) button or select **View** from the **File** menu. Nikon Viewer will start and the selected images will be displayed.

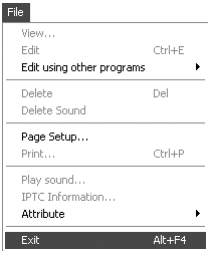


Other Ways of Starting Nikon Viewer

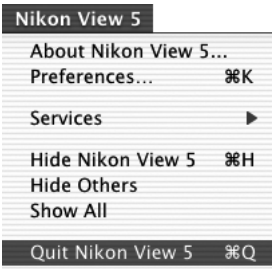
- Double-clicking selected thumbnails in Nikon Browser
- Selecting images in Nikon Browser and pressing the Enter (Windows) or return (Macintosh) key.

Exiting Nikon Viewer

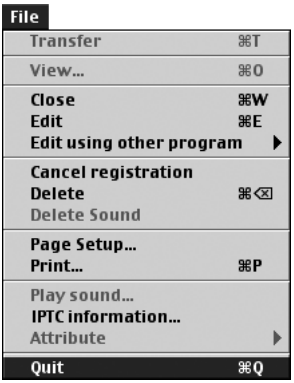
To exit Nikon Viewer, open the **File** menu and select **Exit** (Windows) or **Quit** (Mac OS 9). In Mac OS X, select **Quit Nikon View 5** from the application menu.



Windows



Mac OS X



Mac OS 9

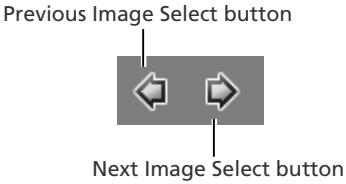
Using Nikon Viewer

Taking a Closer Look

To display a still image in the view area of Nikon Viewer, double-click the associated thumbnail (Nikon Viewer can not be used to view movies). Only one image can be displayed at a time. You can zoom in to and out from images displayed in the viewer.

Nikon Viewer displays only one image at a time. Use the Back and Forward buttons to view the other images. The status bar shows the number of the images currently opened in Nikon Viewer and the status of the image displayed in the view area.

Use the Forward and Back buttons on the toolbar to view the other images when more than one image is selected. The order of display is the same as the order of display in the thumbnail list area of Nikon Browser.

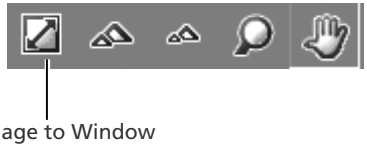


When a Single Thumbnail Is Selected

In Windows, even if you open only one thumbnail in the thumbnail list area, you can browse through all the still images stored in the same folder as the selected image.

Viewing the Entire Image

You can make the entire image fit to the display area by clicking the Fit Image to Window button or selecting **View entire image** from the **View** menu.

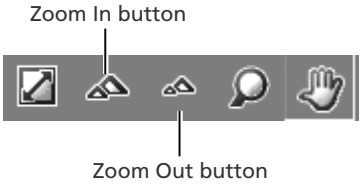


Zooming Images in and Out

You can zoom into or out of the image that is displayed in the view area. To zoom in and out, use the tools described below. The zoom ratio of the displayed image is displayed in the window title bar.

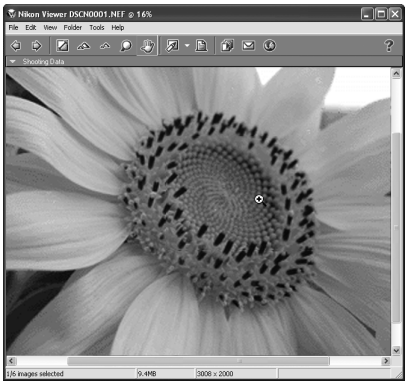
The Zoom In / Zoom Out Buttons

Click the Zoom In button to zoom into the image. Click Zoom Out to zoom out of the image. You can perform the same operations by selecting **Zoom In** or **Zoom Out** from the **View** menu.



Zoom Cursor Button

To select the zoom cursor, click the Zoom Cursor button. The mouse pointer will change to a magnifying glass with a "+" sign in its center.

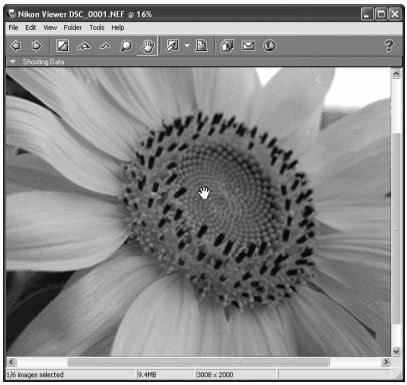


Position the zoom cursor over the current image and click the mouse to zoom in one step. To zoom out one step, hold down Alt (Windows) or option (Macintosh). A "–" sign will appear in the center of the zoom cursor; click the mouse to zoom out one step. The image be centered on the point you clicked.

Scrolling the Image

If the entire image is not visible at the current zoom ratio, you can use the grab cursor to view other areas of the image.

Click the Grab Cursor button on the toolbar, or select **Hand Tool** from the **View** menu. The mouse pointer will change to a hand. To scroll the image, drag the mouse in the direction you want to go. You can also scroll the image using the scroll bars below and to the right of the image area.



Grab cursor and Zoom cursor

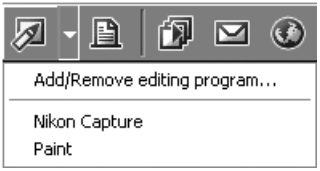
The Hand and Zoom cursors can not be used at the same time.

Editing Image Files

You can open and edit the image displayed in the view area with the program specified in the Still Image (99) and Movie tabs (101) of the Preferences dialog. To open the image in the specified program, click the Edit button in the toolbar. If Nikon Capture 3 Editor is selected as the editor for still images, Nikon Capture 3 Editor will start (124).

Edit button

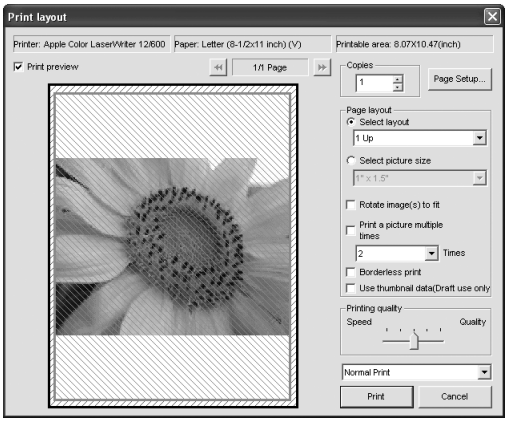
If you register a program using the Add/Remove editing program dialog, you can also edit the image with a program other than the one specified in the Preferences dialog. To display the Add/Remove editing program dialog, click the drop-down arrow on the Edit tool button and select Add/Remove editing program from the menu.



For more information on the Add/Remove Editing Program dialog, see "The Add/Remove Editing Program Dialog" (68).

Printing Images

You can print the image currently displayed in the view area. Use the Print Layout dialog to print the image. To display the Print Layout dialog, click the Print button on the toolbar, or select **Print** from the **File** menu. For more information on printing, see "Printing Images" (71).



Viewing a Slideshow

You can view the images opened in the view area as a slideshow. To view a slideshow, click the Slideshow button in the toolbar, or select **Slideshow** from the **Tools** menu.

Slideshow button

For more information on playing back a slideshow, see "Slideshows" (76) in "Nikon Browser."

Sending Messages by E-Mail

Images displayed in the Image Area can be sent by e-mail. To send images, click the E-mail button on the tool bar or select **E-mail** from the **Tools** menu.

E-mail button

For more information on publishing to the Web, see "Sending Messages by E-Mail" (80) in "Nikon Browser."

Uploading Images (Amercias Only)

You can upload the image displayed in the view area to the on-line album at the Nikon Net site (American residents only). To upload the image, click the Publish to Nikon Net or PDA button in the toolbar or select **Publish to Nikon Net or PDA** from the **Tools** menu. This option is only available in the version of Nikon View released in the Americas.

Publish to Nikon Net or PDA button

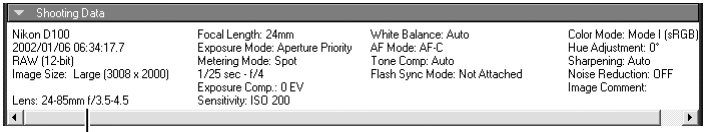
For more information on publishing to the Web, see "Uploading Images" (84) in "Nikon Browser."

If a Single Image Is Open

In Windows, if the currently displayed image is the only image opened, all the image files in the same folder as the one displayed are played back as a slideshow.

Displaying Shooting Data

Shooting data (photo information) for the current image are displayed in the shooting data area. You can expand or collapse the shooting data are by selecting **View Shooting Data** from the **View** menu. You can also expand or collapse the shooting data area by clicking the toggle button (a small triangle) in the upper left corner.



Shooting Data area expanded

Shooting Data area collapsed

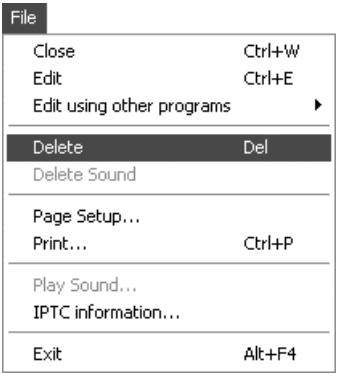
For more information on the shooting data, see "Displaying Shooting Data" (59) in "Nikon Browser."

Viewing File Information

In Nikon Viewer, you can display the file information for the image displayed in the view area. To view the file information, select **IPTC Information** (Windows) or **File Information** (Macintosh) from the **File** menu to display the IPTC Information dialog. For more information on file information, see "Viewing File Information" (60) in "Nikon Browser."

Deleting Image Files

To delete the image file displayed in the view area, select **Delete** from the **File** menu or press the Delete key.



The deleted image file will be moved to the Recycle Bin (Windows) or the Trash (Macintosh), and the next image in the Nikon Browser thumbnail list area will be displayed in Nikon Viewer. If the deleted image was the last image and there are no following files, nothing will be displayed in the view area.

Deleted Image Files

Deleted image files are moved to the Recycle Bin (Windows) or the Trash (Macintosh). To cancel the deletion, open the Recycle Bin or the Trash and return the deleted files back to their original location. In Windows, if you delete image files from the memory card inserted in the camera, card slot, or card reader, or from a network folder, the image files are permanently erased and cannot be recovered.

Viewing help in Nikon View 5

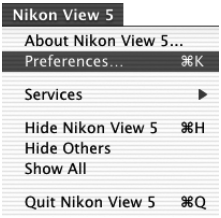
The same help file is displayed whether help is selected in Nikon Transfer, Nikon Browser, Nikon Viewer or Nikon Editor displays the same help file.

Nikon Viewer Preferences

Fine-Tuning Nikon Viewer

To view the Preferences dialog, select **Preferences...** from the **Edit** (Windows or Mac OS 9) or application (Mac OS X) menu. For more information on the Preferences dialog, see "Nikon Browser Preferences" (94).

Windows/Mac OS 9



Mac OS X

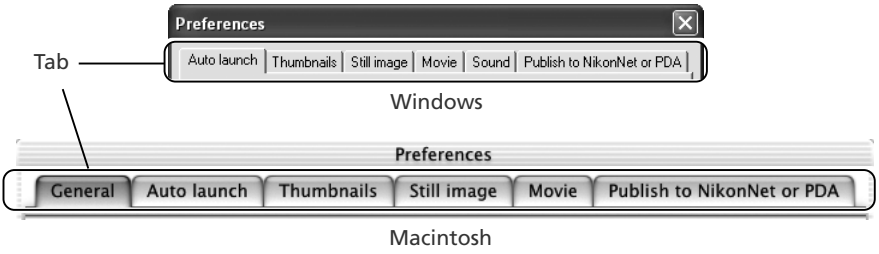
The Preferences dialog contains the following seven tabs:

Tab	Description	
General (Macintosh only)	Choose the volume used for temporary storage.	119
Auto Launch	Choose whether Nikon Transfer starts automatically when a memory card from a supported camera is detected.	120
Thumbnails	Choose whether to create thumbnails from the original image data.	121
Still image	Choose the applications that will be used to play back or edit still images.	124
Movie	Choose the applications that will be used to play back or edit movies.	127
Sound (Windows only)	Choose the application that will be used to play back voice memos.	130
Publish to NikonNet or PDA (Americas only)	Options for uploading images.	132

After making changes to preferences, click **OK** to save changes and return to the Nikon Viewer window. Click **Cancel** to cancel any changes to settings and return to the Nikon Viewer window.

Viewing Preferences

To view settings in any of the seven panels, click the appropriate tab.



Nikon Capture 3 Editor

Image Adjustment

The Nikon Capture 3 editor component contains a variety of tools for enhancing images, including brightness, contrast, color balance, and unsharp mask adjustment. With RAW (NEF) images, it can be used to adjust white balance, tone compensation. In the case of RAW (NEF) images, it can be used to modify white balance, tone compensation, and color mode settings from those in effect at the time the photograph was taken. When RAW images are saved in NEF format, image enhancement settings are saved separately from the original image data, allowing you to modify settings repeatedly without degrading the quality of the original image. Nikon Capture 3 Editor is also equipped with a batch option for automated processing of multiple images.

This chapter details the operations that can be performed using Nikon Capture 3 Editor. It is divided into the following sections:

The Editor Window
Read this section for an overview of the controls in the Nikon Capture 3 Editor window.

Image Adjustment
Read this section for instructions on enhancing images using Nikon Capture 3 Editor.

Nikon Capture 3 Editor Preferences
Read this section for information on fine-tuning settings in the Nikon Capture 3 Editor window.

The Editor Window

Getting to Know Nikon Capture 3 Editor

The main parts of the Nikon Capture 3 Editor window are identified below.

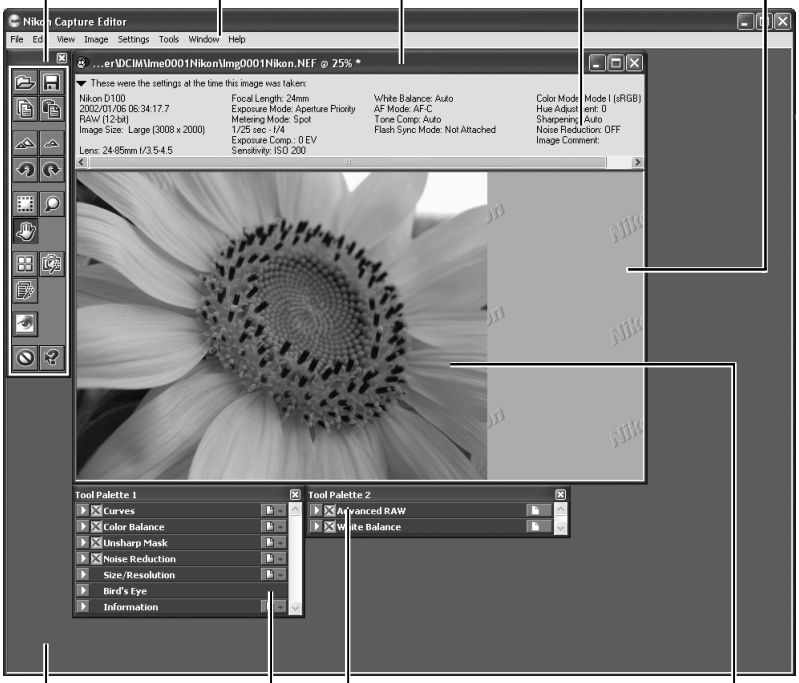
Menu bar
Contains the menus for Nikon Capture 3 Editor.

Shooting data area
Gives photo information on the image displayed.

Title bar
Shows the file name of the image displayed and the current zoom ratio.

Image window
Displays images currently opened for editing. Any number of image windows can be open simultaneously.

Quick Tools palette
Contains tool buttons for Nikon Capture 3 Editor (123).



Application window
(Windows only)

Tool palettes
These palettes are used for image enhancement (134).

Image area
Shows the image currently being edited.

The Menu Bar and Quick Tools

Although many operations can be performed using both menu commands and the buttons in the Quick Tools palette, the explanations in this manual give priority to operations performed using tool buttons.

Quick Tools

The Quick Tools palette contains buttons that replicate commonly-used menu commands.

Button	Name	Function	
	**Open**	Click to open an image file for editing.	127
	**Save**	Save changes to the image in the active image window.	168
	**Copy Image Adjustment**	Copy current image-adjustment settings to the clipboard.	167
	**Paste**	Paste the contents of the clipboard to image enhancement settings in the active window.	167
	**Zoom in**	Zoom in on the image in the active window. See "Using Nikon Viewer."	113
	**Zoom out**	Zoom out from the image in the active window. See "Using Nikon Viewer."	113
	**90 degrees CCW**	Rotate the image in active window ninety degrees counter-clockwise.	131
	**90 degrees CW**	Rotate the image in active window ninety degrees clockwise.	131
	**Selection Cursor**	Use this tool to select the portion of the image in the active window that will be saved.	133
	**Zoom Cursor**	Use to zoom the image in the active window in and out. See "Using Nikon Viewer."	114
	**Grab Cursor**	Use to view portions of the image not currently visible in the active window. See "Using Nikon Viewer."	114
	**Show Nikon Browser**	Launch Nikon Browser.	44
	**Show Nikon Capture Camera Control**	Launch Nikon Capture 3 Camera Control.	190
	**Batch**	Open the Batch dialog, where you can select a folder of images for batch processing.	173
	**Open in Photoshop**	Open the image in the active window in Photoshop.	229
	**Show Original Image Data**	Hide the effects of changes to image adjustment settings.	—
	**Help** (Windows only)	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 displays the function of the item clicked.	—

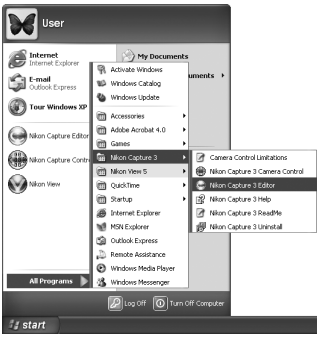
Starting Nikon Capture 3 Editor

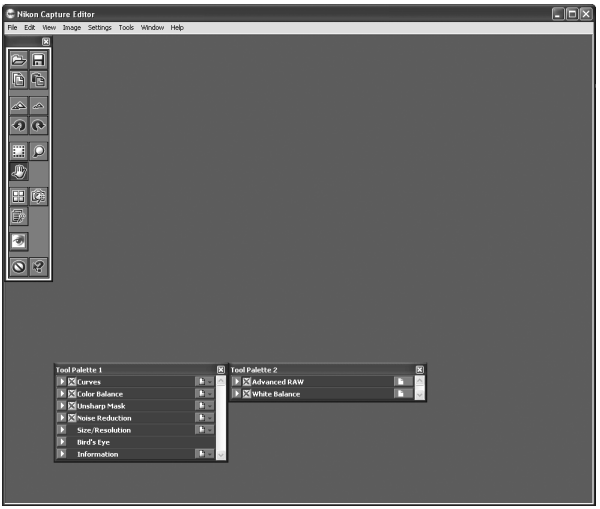
Nikon Capture 3 Editor can be started by selecting **Edit** from the **File** menu when thumbnails are selected Nikon Browser or an image is open in Nikon Viewer. You can also start the Editor directly by selecting Nikon Capture 3 Editor from the **Start** menu (Windows) or double-clicking the application icon (Macintosh).

Windows

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

2 Start Nikon Capture 3 Editor
Select **Nikon Capture Editor** from the **Start** menu (Windows XP) or **Start** > **Programs** > **Nikon Capture 3** > **Nikon Capture 3 Editor** (other Windows versions).





Starting Image Window

In the Macintosh version of Nikon Capture 3, an empty image window is displayed when Nikon Capture 3 Editor is started by double-clicking the application icon. In the Windows version, the application window is displayed.

Macintosh

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

2 **Start Nikon Capture 3 Editor**
Double-click the Nikon Capture 3 Editor icon ( ) in the folder to which you installed Nikon Capture 3.

No image is displayed in the image window

Serial Number

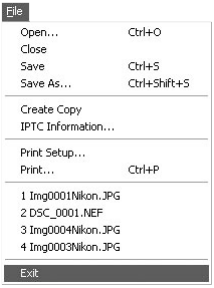
If prompted to supply a serial number when starting Nikon View 5, Nikon Capture 3 Editor, or Nikon Capture 3 Camera Control, enter the serial number for Nikon Capture 3.

Other Ways of Starting the Editor

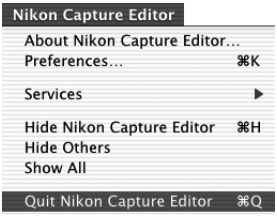
Nikon Capture 3 Editor can be started by double-clicking the Nikon Capture 3 icon ( ) in the folder to which you installed Nikon Capture 3 (Windows, Mac OS 9). If Nikon Capture 3 was registered in the Dock during installation. Mac OS X users will be able to start Nikon Capture 3 Editor by clicking the Nikon Capture 3 icon ( ) in the Dock.

Exiting Nikon Capture 3 Editor

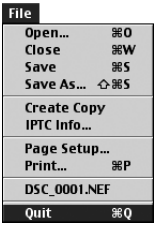
To close the Nikon Capture 3 Editor window and exit Nikon Capture 3, open the **File** menu and choose **Exit** (Windows) or Quit (Mac OS 9). In Mac OS X, select **Quit Nikon Capture Editor** from the application menu.



Windows



Mac OS X



Mac OS 9

Opening Image Files

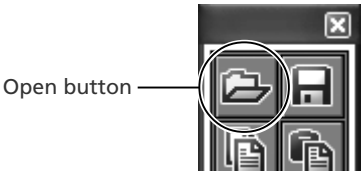
Nikon Capture 3 Editor can be used to open images created with supported cameras and images previously saved using Nikon Capture 3 Editor, Nikon View 5 Editor, or Nikon Capture version 2 or earlier.

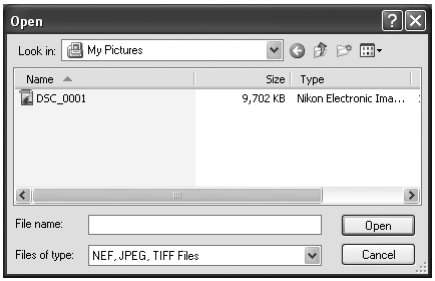
Original image/saved image	File format	Extension
NEF (RAW)	NEF (Nikon Electronic Image Format)	.NEF
Compressed NEF (RAW)		
RGB-TIFF	TIFF (RGB)	.TIF
YCbCr TIFF		
16-bit TIFF (RGB)		
8-bit TIFF (RGB)		
FINE	JPEG	.JPG
NORMAL		
BASIC		
JPEG (Exif-compliant)		
JPEG (JFIF-compliant)		

Image files in the above formats can be opened using the **Open…** command or by drag and drop.

Using the "Open..." Command

1 Click the button or select **Open…** from the **File** menu
The standard Open dialog for your operating system will be displayed.





NEF Files (Nikon Capture 2)

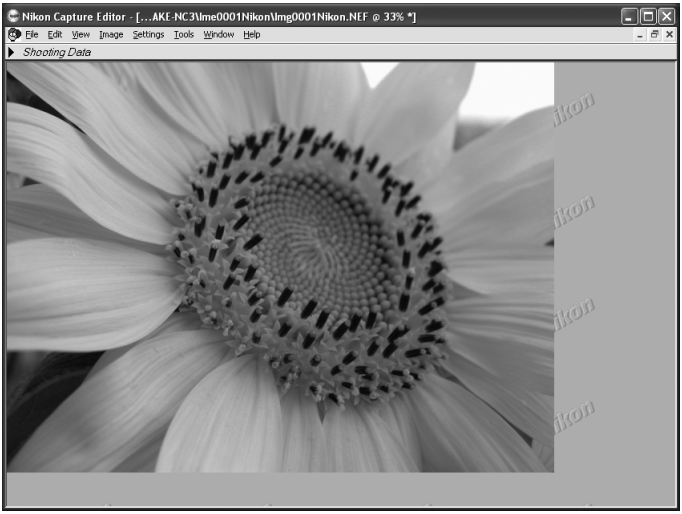
NEF files created with Nikon Capture 3 can not be opened in Nikon Capture 2.

2 Locate the file
Navigate to the drive (volume) and folder containing the file you wish to open.

3 Open the file
Double-click the file or select it from the files listed and click **Open**. The selected file will be opened in an image window in Nikon Capture 3 Editor.

Opening Images from Nikon Browser or Nikon Viewer
With one or more still images selected in Nikon Browser or an image open in Nikon Viewer, click the Edit button in the Quick Tools palette or select **Edit** from the **File** menu.

Edit button

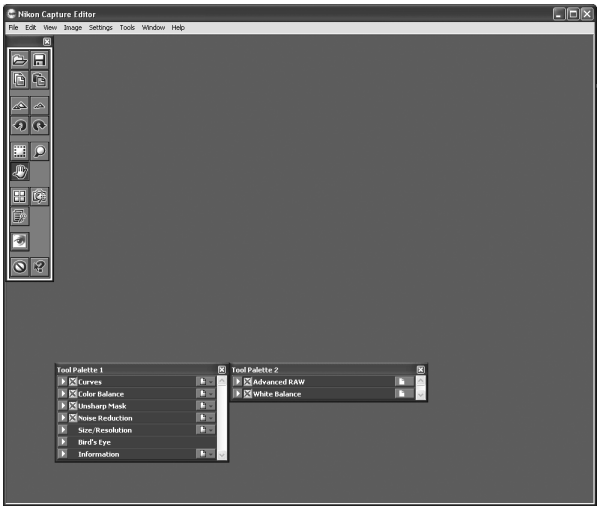


Selected images are opened in image windows

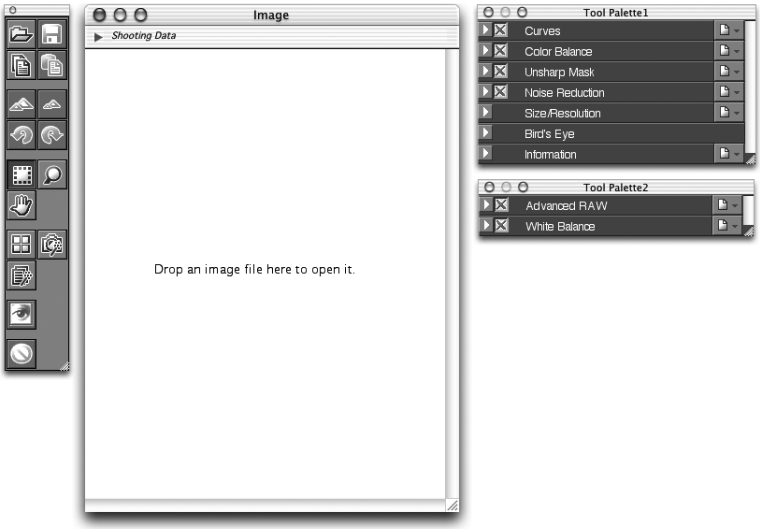
Photo Editing Program
Following installation of Nikon Capture 3, the default photo editing program for Nikon Browser is Nikon Capture 3 Editor. If the photo editing program has changed, return to the Nikon Browser Preferences dialog and select Nikon Capture 3 Editor.

Using Drag and Drop

In the Windows version of Nikon Capture 3 Editor, images can be opened by dragging them into the application window. In the Macintosh version, images can be opened by dragging them into the empty image window displayed when Nikon Capture 3 Editor is started by double-clicking the application icon.



Windows

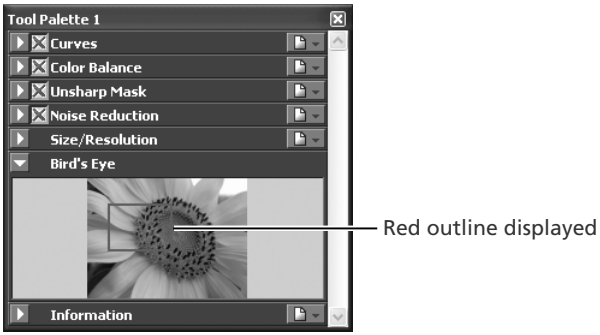


Macintosh

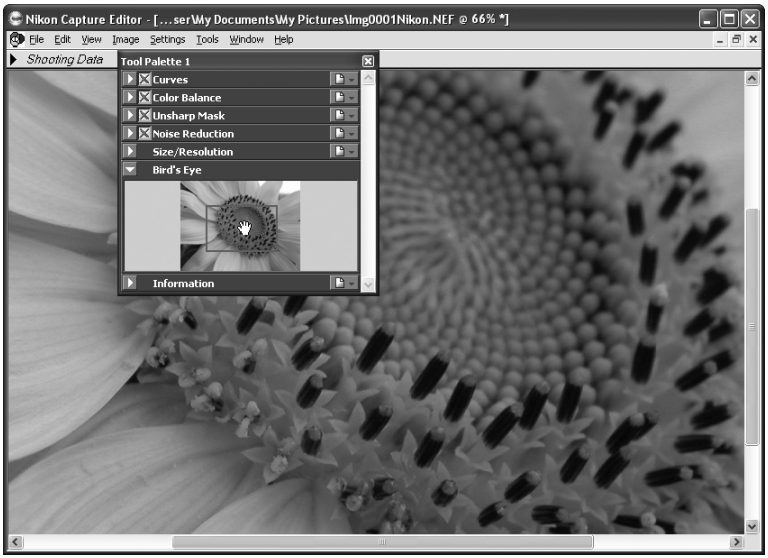
The Bird's Eye Palette

The Bird's Eye palette shows the position of the portion of the image visible in the active image window. To display or hide the Bird's Eye palette, click the triangle in the Bird's Eye palette title bar. By default, the Bird's Eye palette is in Tool Palette 1.

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



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 Palette

The size of the Bird's Eye palette can be adjusted by dragging the borders of the tool palette (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 button or select **90 degrees CW** from the **Rotate** sub-menu to rotate the image in the active window ninety degrees to the right. Click the button or select **90 degrees CCW** from the **Rotate** sub-menu to rotate the image in the active window ninety degrees to the left.

Image before rotation

Image rotated ninety degrees clockwise

Flipping Images

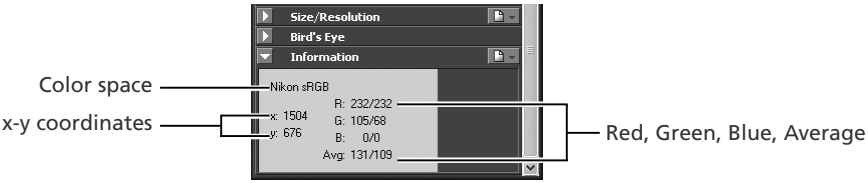
Use the commands in the **Flip** sub-menu to flip the image in the active window horizontally or vertically.

Rotating JPEG Images

Image files must be opened in Nikon Capture 3 Editor before being rotated. To save the changes, the image must then be saved to disk. If the image is in JPEG format, it will be compressed when saved, with a corresponding drop in image quality. Nikon Browser, in contrast, rotates and flips JPEG images without decompressing them first, and no drop in image quality results. We recommend that you flip or rotate JPEG images in Nikon Browser before opening them in Nikon Capture 3 Editor.

The Information Palette

The information palette shows the position and color of the pixel under the mouse pointer. To display or hide the Information palette, click the triangle in the Information palette title bar. By default, the Information palette is in Tool Palette 1.



Information	Description
Color space	The working color space for the image in the active image window is displayed at the top of the information palette. This information is embedded in the file when the image is saved.
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 Adjustment windows have been applied.
x-y coordinates	The position of the cursor in the image window, measured in pixels from the top left corner of the image.

Preferences: Advanced Color

Clicking the icon at the right end of the Information palette tool bar displays a menu from which you can access the Advanced Color tab of the Preferences dialog (223).

Selecting a Crop

Using the crop tool, you can select a portion of an image to be saved in a separate file. If no selection is made, the entire image will be saved.

1 Click the button or select **Selection Cursor...** from the **View** menu
When the mouse is moved over the image area in the active window, it will change to (+).

2 Make a selection
Drag the mouse over the image in the active window to make a selection.

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.

Saving a Selection

Unless the image is saved in NEF format, only the selected portion of the image will be saved. In NEF format, the entire image is saved together with information about the location of the current crop.

Image Adjustment

Enhancing Images

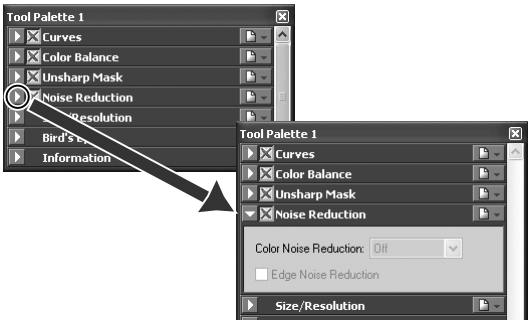
Before they will be ready for display or output on a monitor or printer, images captured from the camera will usually need to be adjusted to a size and resolution appropriate to the task at hand. Other settings, such as white balance, contrast, and sharpness, may also require adjustment. These adjustments are performed using the image adjustment tool palettes.

Using the Tool Palettes

To display the default tool palettes, select **Tool Palette 1** or **Tool Palette 2** from the **View** menu.

Displaying the Contents of a Tool Palette

To display or hide the contents of a tool palette, click the triangle to the left of the palette title.



Hiding and Applying Changes to Settings

Settings in most palettes can only be adjusted, and adjustments applied to the image in the active window, if the Apply button for the palette is checked. If the Apply button is crossed out, the effects of the settings in the palette will not be visible in the image window. To adjust settings, check the Apply button by clicking it once.

The Size/Resolution palette does not have an Apply button. Changes to settings in the Size/Resolution palette are always visible in the image in the active window.

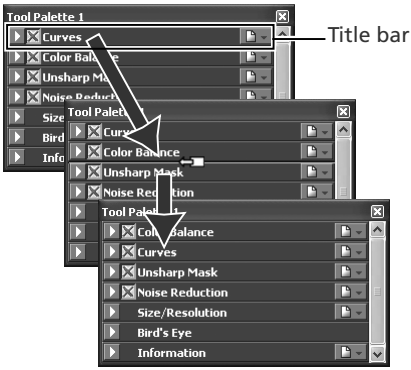
Each palette has a button. Click this button to display the palette sub-menu.

Hiding the Tool Palettes

To hide the tool palettes (including the Quick Tools palette), press the tab key. Press the tab key again to view the palettes.

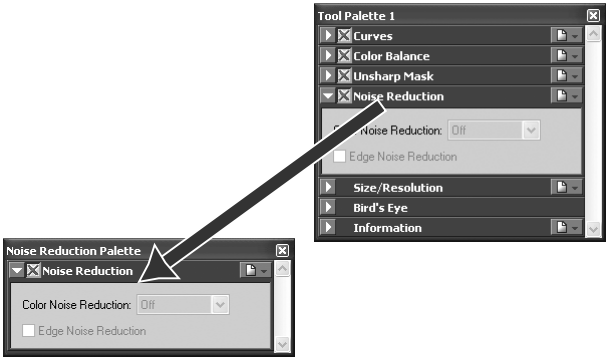
Changing the order of palettes

To change the order of palettes in the tool palette window, click a tool palette title bar and drag it into a new position.



Opening a tool palette in a separate window

Tool palettes can be opened in a separate window by clicking the palette title and dragging it outside the current window to create a new tool palette window containing only the selected palette.



Tools can be added to the new window by dragging additional palettes into the window. The new window will be added to the **View** menu in Nikon Capture 3 Editor. If you close the new window by clicking the window close box, you can open it again by selecting the desired palette from the **View** menu .

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	Palette	
RAW	Adjust white balance.	White Balance	137
	Choose new settings for exposure compensation, image sharpening, tone compensation, color mode, and hue adjustment.	Advanced RAW	143
RAW RGB-TIFF YCbCr-TIFF FINE NORMAL BASIC	Adjust tone, color balance, and contrast. There are two distinct tools for this task: the Curves palette, which provides precise control over tone, and the Color Balance palette, which features simpler controls.	Curves	146
		Color Balance	156
	If the image lacks definition, you can sharpen outlines using the controls in the Unsharp Mask palette. Unsharp mask only be applied at the last step, after all other adjustments have been made.	Unsharp Mask	159
	Reduce the noise common to pictures taken with digital cameras. Nikon Capture supports color noise reduction and edge noise reduction.	Noise Reduction	162
	Adjust the size and resolution of the image for output on a particular device.	Size/Resolution	164

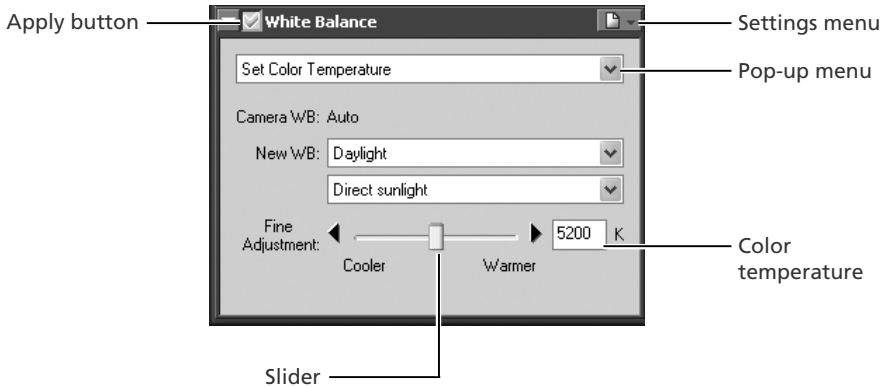
White Balance

The tools in the White Balance palette 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 **Set Color Temperature**

Display the White Balance Adjustment palette and select **Set Color Temperature** from the pop-up menu at the top of the palette.



2 If the Apply button is off ( ) , turn it on ( )

If the Apply button is off, the image in the active image window will reflect the white balance settings in effect at the time the photograph is taken.

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 palette will be grayed out and inactive.

3 Adjust white balance using the options in the White Balance palette

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.

Option	Sub-menu option	Color temperature	Description
Use Gray Point	—	—	White balance is set to the value chosen in the gray-point selection dialog ( 140).
Recorded Value	—	—	White balance is set to the value recorded when the picture was taken.
Calculate Automatically	—	—	White balance is adjusted automatically based on the white balance of the original image.
Incandescent	—	3,000 K	Suited to photos taken under incandescent lighting.
Daylight	**Direct sunlight**	5,200 K	Suited to photos taken in direct sunlight.
	Cloudy	6,000 K	Suited to photos taken under overcast skies.
	Shade	8,000 K	Suited to photos taken 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	Suited to photos taken 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. 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.

"Calculate Automatically"

Depending on the model of camera used to take the image in the active image window, the **New WB** menu may not contain an **Calculate Automatically** option. **Calculate Automatically** may not produce the desired results with all images; if necessary, use another white balance setting or sample the image for gray point.

"Mired"

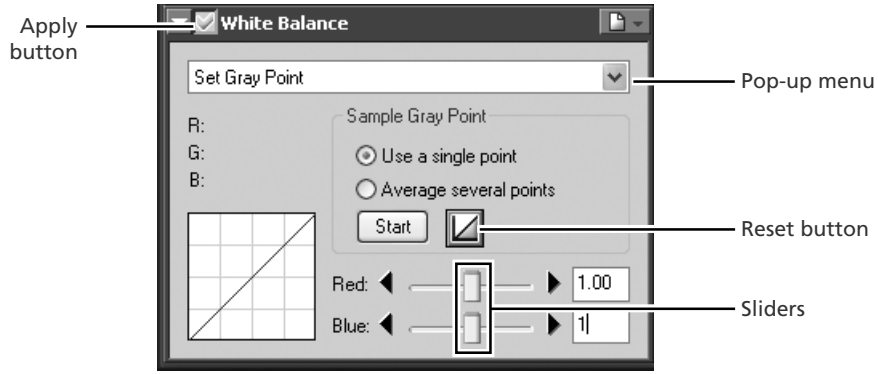
Any given change in color temperature produces a greater difference in color at low color temperatures than it would at higher color temperatures. For example, at a color temperature of 6000 K, a change of 100 K produces almost no change in color, while a change of the same amount at 3000 K would produce a large difference in color. Mired, calculated by multiplying the inverse of the color temperature by 10^6, is a measure of color temperature that takes such variation into account, and as such is the unit used in color-temperature compensation filters.

Change in Color Temp.	Mired
4000 K – 3000 K = 1000 K	83 mired
7000 K – 6000 K = 1000 K	23 mired

Sampling the Image for Gray Point

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

2 If the Apply button is off (☒) , turn it on (☑)



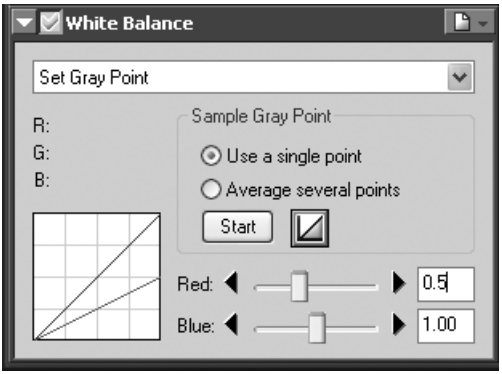
3 Sample the image to choose a reference point for white balance
You can define white balance using a single point or the average of several points. During sampling, the values for red (R), green (G), and blue (B) for the pixel under the cursor will be shown in the White Balance palette. Refer to these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

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

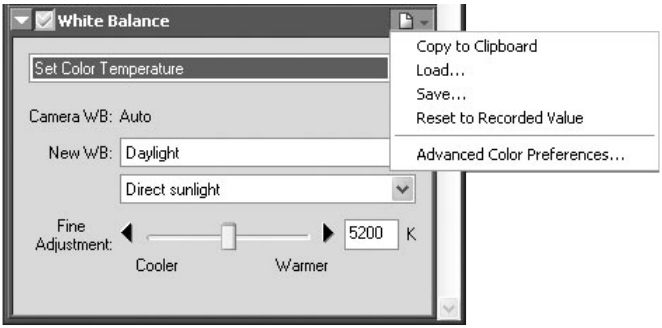
Very large and small values for gain can result in a drop in image quality. We recommend values between 0.25 and 4.0.

Gain

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

The White Balance Settings Menu

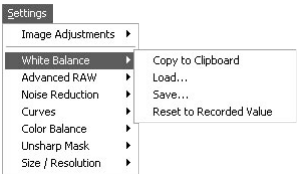
Clicking the icon in the White Balance palette displays the White Balance Settings menu.



Option	Description
Copy to Clipboard	Copy current white balance settings to the clipboard.
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 (only files with the extension ".nwb" will be displayed). The settings in the White Balance palette 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. 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.
Advanced Color Preferences...	Open the Nikon Capture 3 Editor Preferences dialog to the Advanced Color tab (223).

The Settings Menu

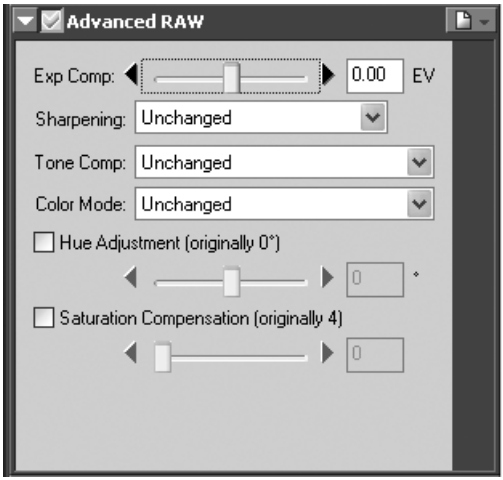
The White Balance Settings menu can also be displayed by selecting **White Balance** from the **Settings** menu.



Advanced RAW

The options in the Advanced RAW palette 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 Display the Advanced RAW palette



2 If the Apply button is off ( ) , turn it on ( )

3 Adjust 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. Choose 0 to perform no compensation.

Sharpening

Adjust the sharpness of outlines in the image according to the scene or your personal preference. Choose from **Unchanged**, **None**, **Low**, **Normal**, or **High**. In the case of photographs taken with the D1, **Normal** is equivalent to **None**.

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 palette will be grayed out and inactive.

Color Mode

Mode I is suited to portraits that will be printed or used "as is" with little or no modification. Mode II is adapted to the Adobe RGB color space. This color space is capable of expressing a wider gamut of colors than sRGB, making it the preferred choice for studio photography or images that will be modified as part of a commercial production work flow. Mode III is suited to nature or landscape shots that will be printed or used "as is" with little or no modification.

Tone Comp

Adjust image contrast. Choose from **Unchanged**, **Less Contrast**, **Normal**, **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 D100, D1X and D1H, selecting **Unchanged** restores the tone curve in effect at the time the photograph was taken.

Color Mode

Choose a color mode for fine control over chroma, brightness, and color gamut, much as you would choose different kinds of color film for different scenes. Choose from **Unchanged**, **D1 Mode (NTSC)**, **Mode I (sRGB)**, **Mode II (Adobe RGB)**, or **Mode III (sRGB)**. In the case of images taken with the D1, **Unchanged** is equivalent to **D1 Mode (NTSC)**.

Hue Adjustment

Adjusts hue without affecting brightness or saturation. Hue can be adjusted in the range –9 ° to 9 ° in seven steps of 3 °. If red is taken as the starting color, raising hue above 0 ° (the default setting, at which hue is unchanged) would introduce a yellow cast, making colors that would be red at a setting of 0 ° appear increasingly orange. Lowering hue below 0 ° would introduce a blue cast, making colors that would be red at a setting of 0 ° appear increasingly purple (in the case of the D1X and D1H, –9 ° is equivalent to a camera hue setting of 0, 0 ° to a setting of 3, and 9 ° to a setting of 6). To use the value for hue adjustment in effect at the time the photograph was taken, turn the **Hue Adjustment** check box off.

Saturation Compensation

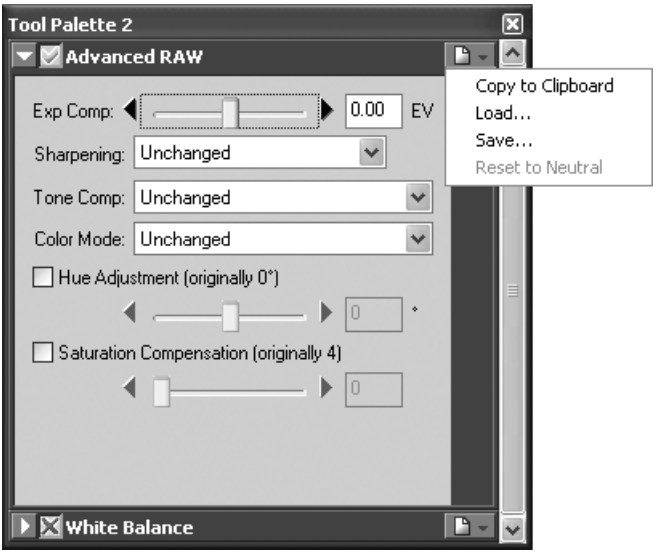
This option is used to lower color saturation, principally of primary colors (red, green, and blue). This is a particularly effective when printing, when it can be used to adjust saturated areas of the image. Adjustments can be made in ten steps from 0 to 9 using the slider, with higher numbers representing lower saturation, principally of primary colors. Levels of 8 or 9 can reduce the color noise seen in photographs taken at high sensitivity (ISO equivalency) settings. If the original image was taken with the D100, the default position for the slider will be the value chosen by the camera; with other cameras, the default setting is 0. To use the value for hue adjustment in effect at the time the photograph was taken, turn the **Saturation Compensation** check box off.

Hue

The RGB color model used in digital photographs reproduces colors using differing amounts of red, green, and blue light. By mixing two colors of light, a variety of different colors can be produced. For example, red combined with a small amount of green light produces orange. If red and green are mixed in equal amounts, yellow results, while a smaller amount of red produces a yellow green. Mixing different amounts of red and blue light produces colors ranging from a reddish purple through purple to navy, while mixing different amounts of green and blue light produces colors ranging from emerald to turquoise. (Adding a third color of light results in lighter hues; if all three mixed in equal amounts, the results range from white through gray.) When this progression of hues is arranged in a circle, the result is known as a color wheel.

The Advanced RAW Settings Menu

Clicking the button in the Advanced RAW palette displays the Advanced RAW settings menu.



Option	Description
Copy to Clipboard	Copy current Advanced RAW settings to the clipboard.
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 (only files with the extension ".nar" will be displayed). The settings in the Advanced Raw palette 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. 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**.

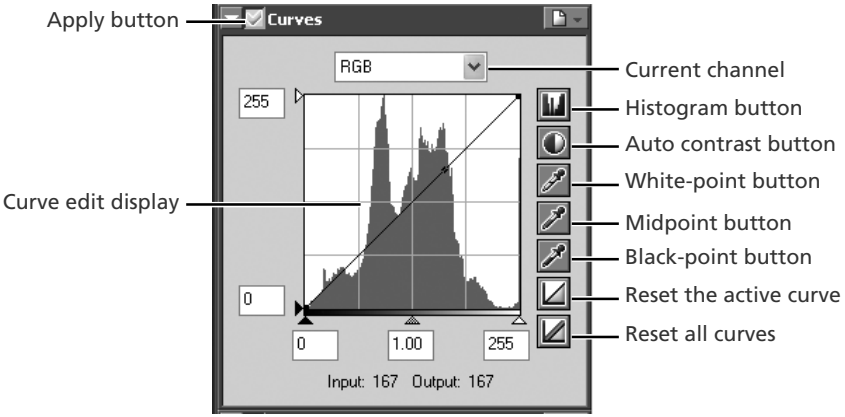
The Settings Menu

The Advanced RAW Settings menu can also be displayed by selecting **Advanced RAW** from the **Settings** menu.

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 palette (see "Color Balance" later in this chapter) and the Curves palette. Of the two, the Curves palette offers the more precise control. The Color Balance palette is useful when, for example, you want to adjust brightness or color balance for all pixels in the image. The Curves palette, 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—an Overview

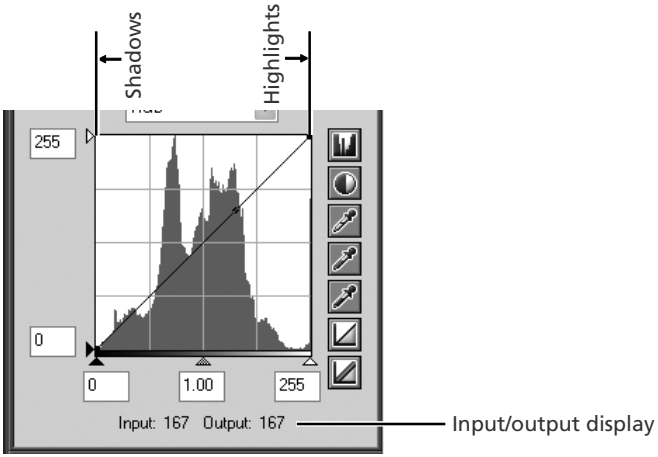


The main editing tool in the Curves palette is the curve edit display, which contains a curve showing the relationship between input (the tones in the original image) and output (how the tones in the input will be represented in the final image). Separate curves control the relationship between input 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.

Resizing the Curves Palette

The Curves palette can be resized by dragging its borders (Windows) or by dragging the handle at the lower right corner of the palette (Macintosh). The curves edit display changes with the size of the palette, 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.

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.



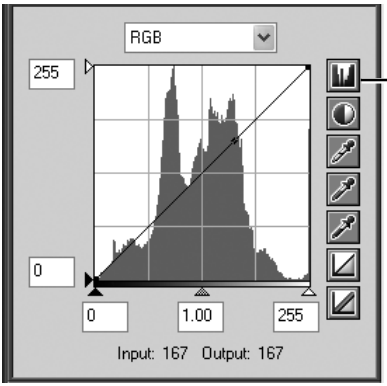
When the cursor is moved over the curve edit display, the input and output values for the point under the cursor are shown in the input/output display. The input value represents the level of the pixel in the original image, the output value the level of the pixel after any changes to the curve have been applied.

The Curve Edit Display

Although values for input and output in the Curves palette 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.

Viewing the Histogram

The first step in adjusting tone levels and color balance in the Curves palette 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.

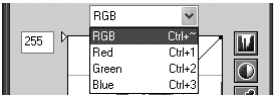


By assigning the darkest tones in the image an output value of zero and the brightest tones in the image an output value of 255, blacks will be output as blacks and whites as whites, making the most effective use of the dynamic range of the output device.

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 1 (Windows)/⌘ 1 (Macintosh) Red channel (RGB)
- Ctrl 2 (Windows)/⌘ 2 (Macintosh) Green 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

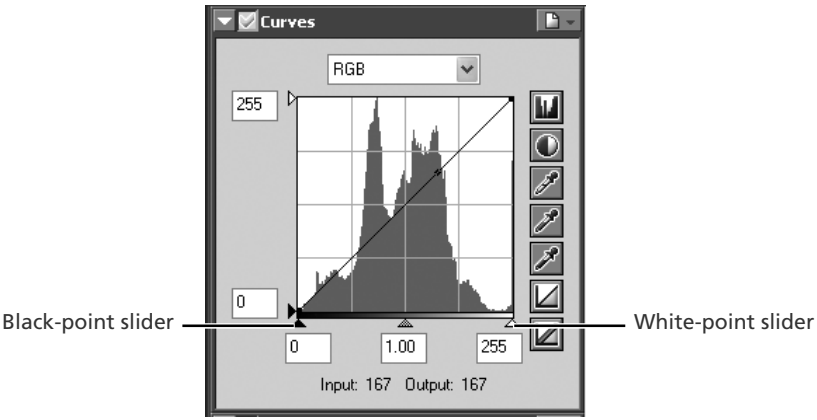
In automatic contrast adjustment, Nikon Capture automatically selects white and black points that exclude a certain percentage of the brightest and darkest pixels in the image, steepening curves for enhanced contrast (the exact percentage of pixels excluded can be specified in the Preferences dialog; 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 palette (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 palette 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.

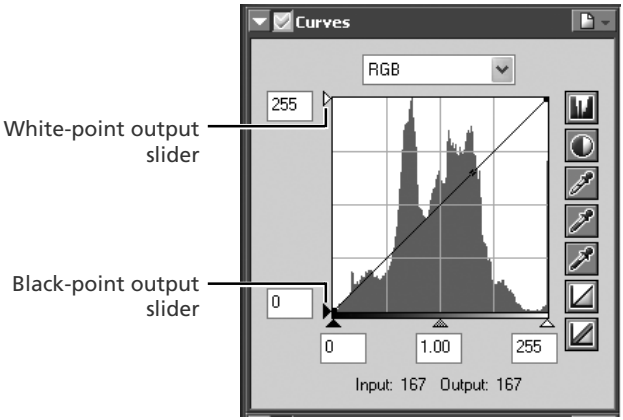
Setting the White Point or Black Point for the Current Channel

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.

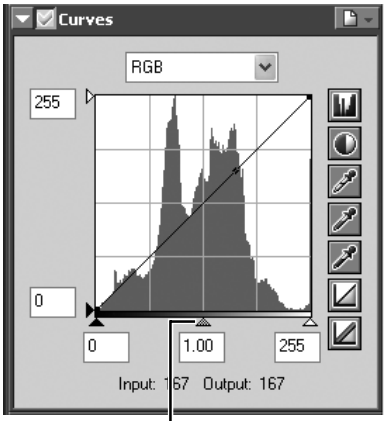


To set the output level, click the slider once to activate it, then drag it up or down until you have found the desired output level (the output level can also be set by entering a value directly in the text box to the left of the slider). The effects of the change will be reflected in the active image.

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.

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 palette 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

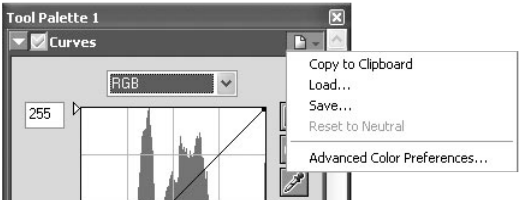
The default linear curve for the current channel can be restored by clicking the button in the Curves palette.

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 palette.

The Curves Settings Menu

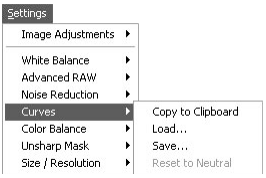
Clicking the button in the Curves palette displays the Curves Settings menu.



Option	Description
Copy to Clipboard	Copy current Curves settings to the clipboard.
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 (only files with the extension ".ncv" will be displayed). The settings in the Curves palette 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. Curves are saved with the extension ".ncv".
Reset to Neutral	Reset all curves to linear.
Advanced Color Preferences...	Open the Nikon Capture 3 Editor Preferences dialog to the Advanced Color tab.

The Settings Menu

The **Curves** Settings menu can also be displayed by selecting **Curves** from the **Settings** menu.

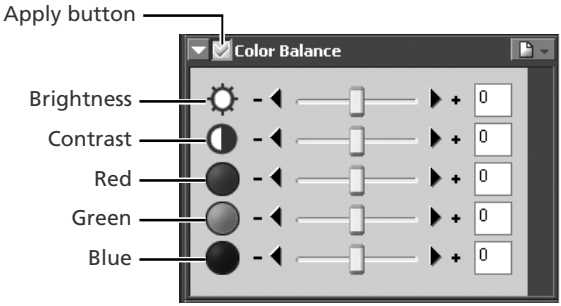


Color Balance

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

Adjusting Brightness, Contrast, and Color Balance

1 Display the Color Balance palette



2 If the Apply button is off ( ) , turn it on ( )

3 Adjust brightness, contrast, and color balance

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

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 palette, 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

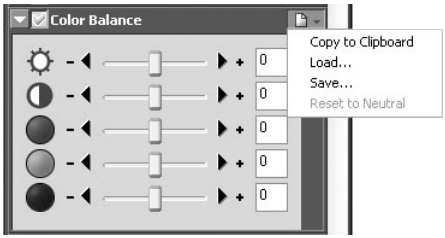
Dragging the contrast slider in the + direction heightens the difference between highlights and shadows in the image, increasing contrast. Dragging the slider in the – direction decreases the difference between light and dark portions of the image, lowering contrast. A value for contrast between –50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

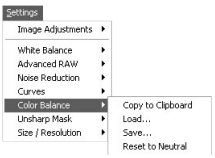
Clicking the button in the Color Balance palette displays the Color Balance Settings menu.



Option	Description
Copy to Clipboard	Copy current Color Balance settings to the clipboard.
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 (only files with the extension ".nca" will be displayed). The settings in the Color Balance palette 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. Color Balance settings are saved with the extension ".nca".
Reset to Neutral	Resets all brightness, contrast, and color balance settings to zero.

The Settings Menu

The Color Balance **Settings** menu can also be displayed by selecting **Color Balance** from the **Settings** menu.

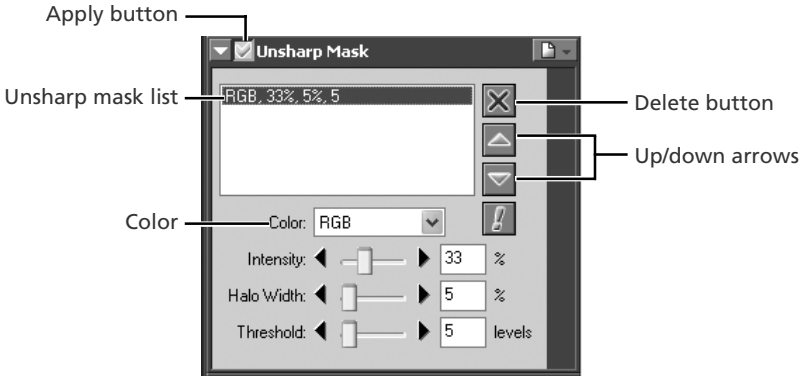


Unsharp Mask

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 Display the Unsharp Mask palette



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.

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 Create additional masks

The controls in the Unsharp Mask palette allow you to select multiple combinations of colors that can be sharpened to different degrees. Repeat steps 1–4 to create additional masks for different color combinations. 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.

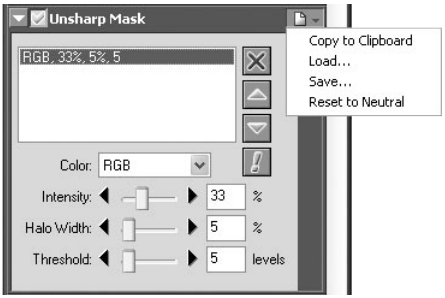
Unsharp Mask

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. An intensity of around 20% in Nikon Capture 3 is equivalent to about 100% in Adobe Photoshop.

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

Clicking the button in the Unsharp Mask palette displays the Unsharp Mask Settings menu.



Option	Description
Copy to Clipboard	Copy current Unsharp Mask settings to the clipboard.
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 (only files with the extension ".num" will be displayed). The settings in the Unsharp Mask palette 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. Unsharp Mask settings are saved with the extension ".num".
Reset to Neutral	Deletes all Unsharp Masks currently displayed in the Unsharp Mask palette.

The Settings Menu

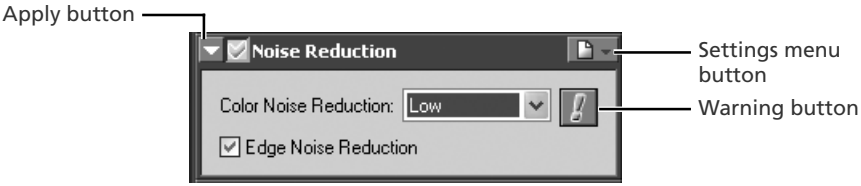
The **Unsharp Mask** Settings menu can also be displayed by selecting **Unsharp Mask** from the **Settings** menu.

Noise Reduction

This palette can be use to mitigate the effects of noise that sometimes appears in images taken with digital cameras.

Reducing Noise

1 Display the Noise Reduction palette



2 If the Apply button is off (☒) , turn it on (☑)

3 Adjust noise reduction options

To reduce color noise, select **None**, **Low**, **Moderate**, or **High** from the **Color Noise Reduction** menu. Edge noise can be reduced by checking the **Edge Noise** check box. Check the results in the image in the active window and adjust settings as necessary.

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 Noise Reduction to be displayed. Click the button to view the warning.

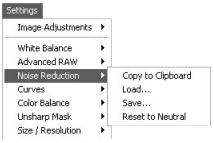
The Noise Reduction Settings Menu

Clicking the button in the Noise Reduction palette displays the Noise Reduction Settings menu.

Option	Description
Copy to Clipboard	Copy current Noise Reduction settings to the clipboard.
Load...	Select this item to load Noise Reduction 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 (only files with the extension ".nnr" will be displayed). The settings in the Noise Reduction palette will instantly revert to the saved settings.
Save...	Select this item to save Noise Reduction 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 Noise Reduction settings. Noise Reduction settings are saved with the extension ".nnr".
Reset to Neutral	Resets Noise Reduction settings to their default values.

The Settings Menu

The **Noise Reduction** Settings menu can also be displayed by selecting **Noise Reduction** from the **Settings** menu.



Output Size and Resolution

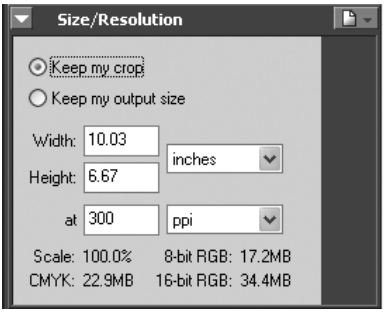
The Size/Resolution palette is where you specify the final ("output") size of the portion of the image that will be saved when **Save as...** is selected from the **File** menu. The choice of settings in the Size/Resolution palette depends on how you intend to use the image and the amount of storage 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 Display the Size/Resolution palette



2 Make changes to options as described below

Keep my crop

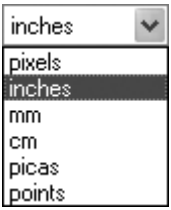
When **Keep my crop** is selected, you can use the mouse to adjust the size and position of the current crop as desired. If you enter a new value for height or width in the Size/Resolution palette, the remaining dimension changes automatically to maintain a constant height-width aspect ratio, and scale 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 palette. 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.



At

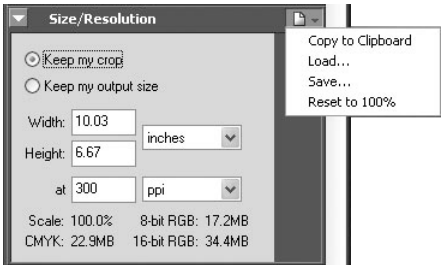
The **At** text box is where you enter the output resolution. This text box is not active if the unit chosen for output size is "pixels," when resolution is fixed at 300 ppi. The value chosen at other settings should reflect the resolution of the output device on which the final image is to be printed. 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.

Scale/File Size

Scale (output size as a percentage of input size, maximum 200%) is displayed at the bottom of the Size/Resolution palette, 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

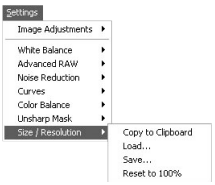
Clicking the button in the Size/Resolution palette displays the Size/Resolution Settings menu.



Option	Description
Copy to Clipboard	Copy current Size/Resolution settings to the clipboard.
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 (only files with the extension ".nsr" will be displayed). The settings in the Size/Resolution palette 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. 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).

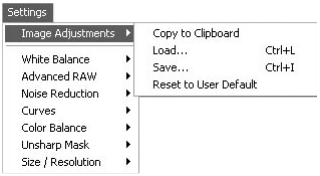
The Settings Menu

The **Size/Resolution** Settings menu can also be displayed by selecting **Size/Resolution** from the **Settings** menu.



Saving and Loading Image Adjustment Settings

Image adjustment settings for all tool palettes (including the status of the Apply button for each palette) can be copied to the clipboard saved in combined settings file. When the combined settings are pasted or read into the Nikon Capture 3 Editor, they will apply to all palettes simultaneously. These operations are performed using the commands in the **Settings** > **Image Adjustments** menu, which also contains an option for restoring all tool palettes to the settings in effect at the time the photograph was taken.



Option	Description
Copy to Clipboard	All image adjustment settings for the image in the active window are copied to the clipboard. You can paste them into the tool palettes for another window by selecting **Paste** from the **Edit** menu when the window is active.
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 (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. If this file is later selected for batch processing, images will be processed according to the settings in the file (175, 198). Joint settings files are saved with the extension ".set".
Reset to User Defaults	Select this option to restore image adjustments settings for the image in the active window to the settings in effect when the photograph was taken.

Saving Images

Nikon Capture supports a variety of file formats. Images displayed in Nikon Capture 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.

Choosing a File Type

Nikon Capture 3 supports the following file types when saving images:

File type	Compression	Extension
NEF (Nikon Electronic Image Format)	Uncompressed	.NEF
16-bit TIFF (RGB)	Uncompressed	.TIF
8-bit TIFF (RGB)		
TIFF (CMYK)		
JPEG (Exif-compliant)	Compressed	.JPG
JPEG (JFIF-compliant)		

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 5 or Nikon Capture 3, or in Adobe Photoshop 5.0 or later (Photoshop LE excluded) using the Nikon NEF filter supplied with Nikon View 5.

Images saved in NEF format maintain the high quality of the original photograph; adjustments to White Balance, Advanced Raw, Curves, Color Balance, Unsharp Mask, Noise Reduction, 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 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.

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.

NEF

Nikon Capture 2 may be unable to display NEF images saved using Nikon Capture 3. Nikon Capture 3 can however be used to open NEF images created with Nikon Capture 2.

JPEG

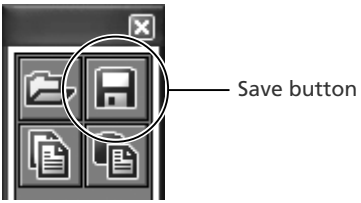
This file type is adequate for images that will be output at low resolution or distributed in electronic form. Compression allows more images to be saved in the same amount of disk space while preserving the ICC profile and caption information. Note, however, that JPEG compression results in loss of 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.

Options for Saving Image Files

Nikon Capture offers two options for saving files: **Save** and **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.

Using the "Save" Command

To save changes to an image without creating a new file, click the button or select **Save** from the **File** menu. The existing file will be overwritten.



JPEG

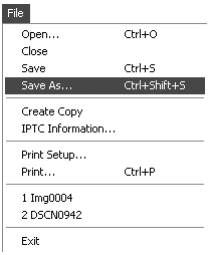
Image quality will be affected if the same image is saved multiple times in JPEG format.

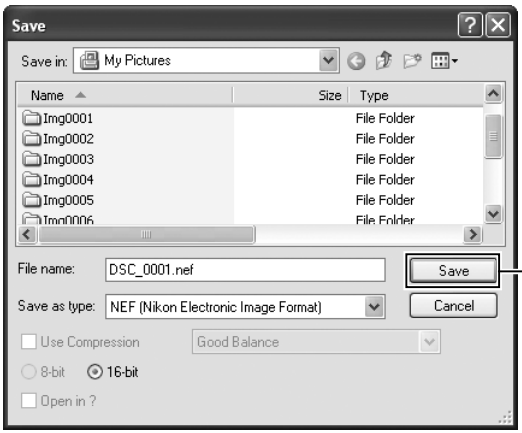
The Save Button

Clicking the button saves any changes to the current file, overwriting the original image. The Save As dialog is not displayed.

Using the "Save as..." Command

1 Select **Save As...** from the **File** menu
The standard Save dialog for your operating system will be displayed.





2 Choose a location
Navigate to the desired drive (volume) and folder.

3 Choose a file type
Choose a file type (file format) from the pop-up menu. See "Choosing a File Type" (168) for more information.

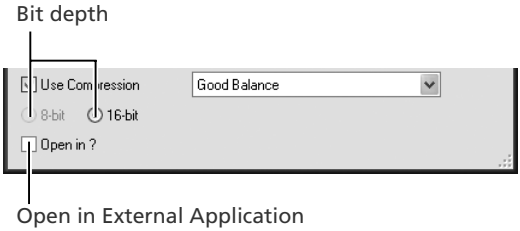
4 Choose a compression ratio
If the file format chosen in Step 3 supports compression, the **Use Compression** check box will be checked. Select the compression ratio from "Highest Compression Ratio," "Good Compression Ratio," "Good Balance," "Good Quality," and "Excellent Quality."

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

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

Save Options

In addition to the settings listed above, the following options are available in the Save dialog:



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.

Printing Images

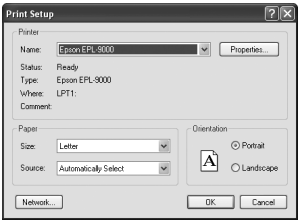
Images can be printed directly from Nikon Capture 3 Editor to test the effects of image adjustments. For more information on printing images, see "Nikon Browser: Printing Images" (71).

1 Open the image

Be sure the image you wish to print is open in Nikon Capture 3 Editor.

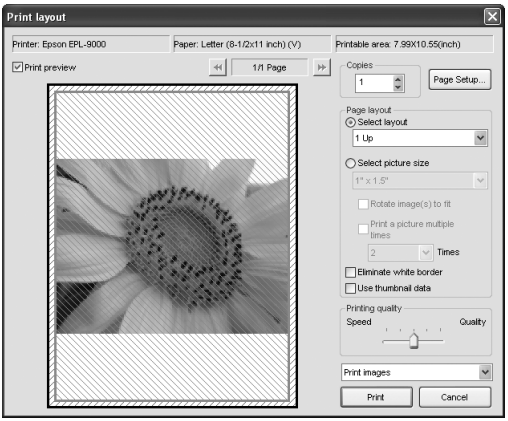
2 Adjust the page setup

Choose **Page Setup** from the **File** menu to display the page setup dialog for your printer and operating system. Adjust settings as desired and click **OK**.



3 Print the image

Selecting **Print...** from the **File** menu displays the Print Layout dialog, where you can select the layout and the number of copies to be printed. Click **Print** to begin printing.



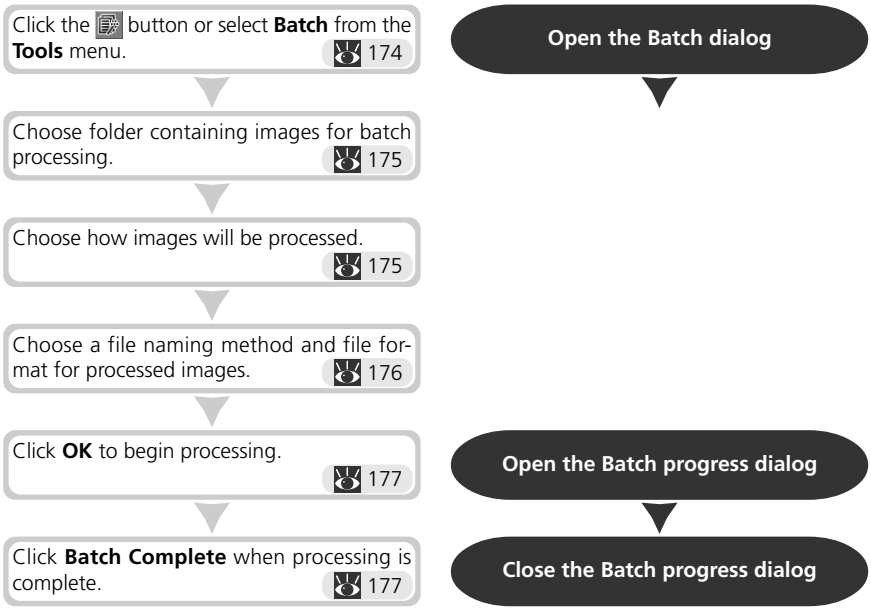
Setting up Your Printer

Note that the printer must be properly connected and the printer drivers correctly installed.

Batch Processing

Nikon Capture 3 supports automated processing of multiple images (batch processing). 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 photographs taken under identical conditions.

When using batch processing, we recommend that you open one of the images to be processed in Nikon Capture 3 and edit image adjustment settings (white balance adjustment, advanced RAW settings, curves, color adjustment, Unsharp Mask, noise reduction, 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 **Settings** > **Image Adjustment** menu (167). 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.



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 3 (images saved in NEF format from Nikon Scan 3 can not be processed).

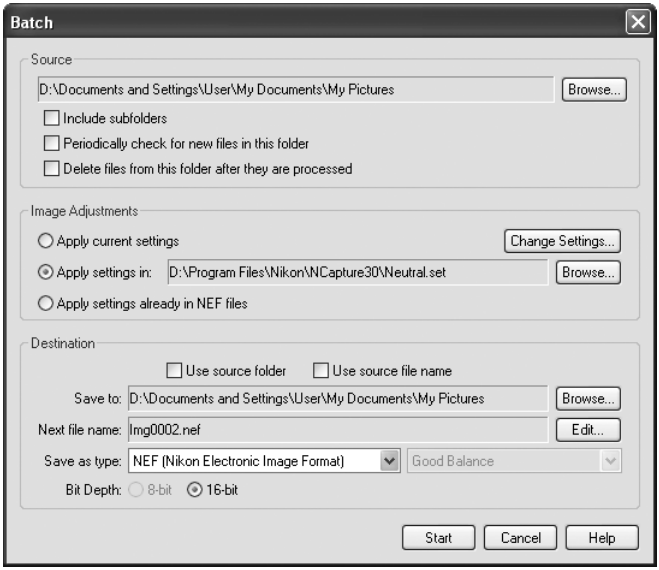
Before Using Batch Processing

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.

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 camera, see "Nikon Capture 3 Camera Control" (197).

1 Display the Batch dialog

Select **Batch** from the **Tools** menu or click the button to display the Batch dialog.



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 Choose a source folder
In the Source section, choose the folder containing the images to be processed. The current folder is listed in the text box. To choose a new folder, click the **Browse** button and navigate to the desired location.

Include subfolders
Check 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 checked, Nikon Capture 3 will check for new images in the specified folder once every ten seconds.

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

3 Specify how images will be processed
In the Image Adjustments 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 **Settings** > **Image Adjustment** menu (167). When this option is selected, a joint settings file can be selected by clicking the **Browse** button to its right.

Apply settings already in NEF files
Check this option to apply settings previously saved with NEF files. If this item is not checked, the saved settings will be replacing with the settings chosen in the Image Enhancements section.

Orientation

Images processed using the batch option are saved in their original orientation. When **Apply current settings is selected**, images will not be rotated or flipped, regardless of whether flips or rotations have been applied to the image in the active image window. If batch processing is performed on images that have been flipped or rotated in Nikon Browser, these changes in orientation will be preserved when the image is saved.

Existing Image Adjustment Settings

If the **Apply settings already in NEF files** option is not 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 check this option and use batch processing to save all the images to a single folder in sixteen-bit TIFF format.

4 Choose a destination for the processed images

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

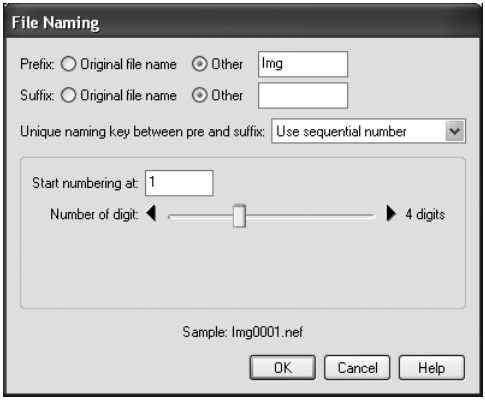
When this option is selected, processed images will be saved under the same name and in the same location as the original images, although the file extension will change if the chosen file format differs from the original.

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.

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 File Naming dialog will be displayed. For more information, see "Nikon Transfer" (22).



Save as type

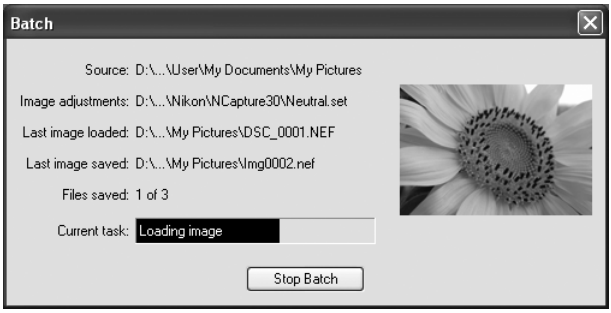
Choose the file format that will be used to save the processed images. For more information on the options available, see "File Formats" (168).

Bit Depth

Choose the bit depth (the number of bits of color information per channel for each pixel in the image) at which files will be saved. The 16-bit option is only available if the selected file type is NEF or TIFF (RGB) and the original image has a bit depth of over eight bits.

5 Begin processing

Click **OK** to put the selected settings into effect and begin processing. A batch progress dialog will be displayed.



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

6 Exit the batch processing dialog

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

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.

Error Messages

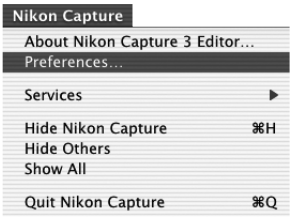
If an invalid file name or other error is identified in the batch processing dialog, a message will be displayed. Return to the batch processing dialog and adjust settings as directed in the message.

Nikon Capture 3 Editor Preferences

Fine-Tuning Nikon Capture 3 Editor

To view the Preferences dialog, select **Preferences...** from the **Edit** (Windows or Mac OS 9) or application (Mac OS X) menu.

Windows / Mac OS 9



Mac OS X

The Preferences dialog contains the following five tabs:

Tab	Description	
General	Specify the default image enhancement options that will apply to new images.	179
Temporary Files	Specify the location of the folders used for temporary storage.	179
Advanced Color	Set the defaults for the white and black points in the Curves window.	180
Grid Lines	Specify the spacing and color of the grid displayed in image windows.	181
Color Management	Select the color profiles used by the Nikon Color Management System (CMS).	182 183

After making changes to preferences, click **OK** to save changes and return to the Nikon Capture 3 Editor window. Click **Cancel** to cancel any changes to settings and return to the Nikon Capture 3 Editor window.

Viewing Preferences

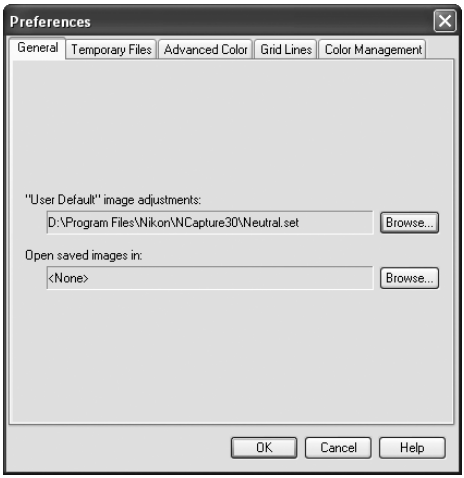
To view settings in any of the five panes, click the appropriate tab.

The General Tab

The General tab contains the following items:

"User Default" image adjustments
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.

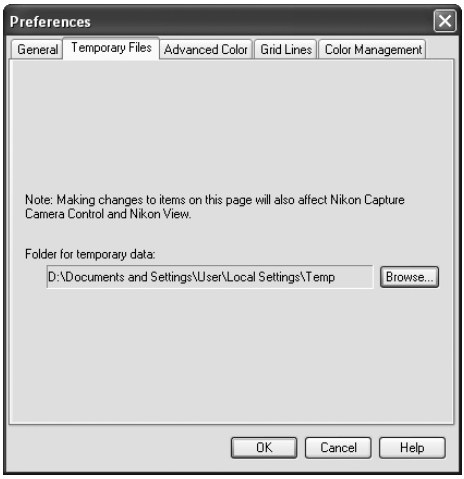
Open saved image in
To specify the application used to open saved images, click the **Browse…** button and navigate to the desired application.



The Temporary Files Tab

The Temporary Files tab offers the following option:

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.

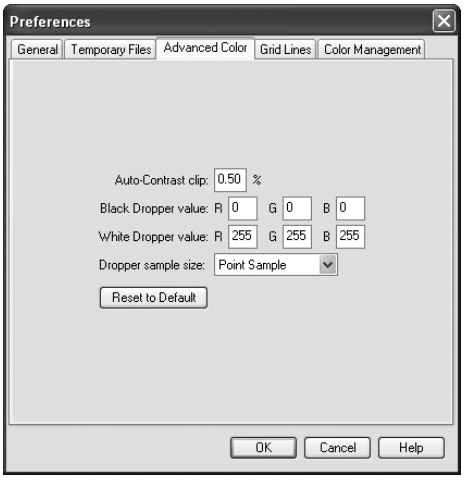


The Temporary Files Tab

Changes to settings in the Temporary Files tab also apply to Nikon Viewer and Nikon Capture 3 Camera Control. Nikon Capture 3 must be restarted before changes to settings will take effect.

The Advanced Color Tab

The Advanced Color tab contains the following items:



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.

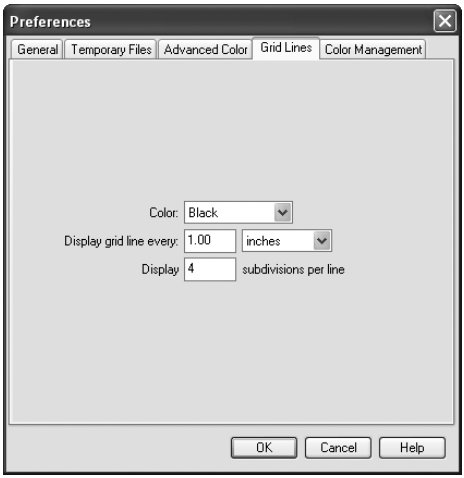
Black Dropper value/White Dropper value
Controls the default output values for white point and black point. Output for each channel can be set to a value between zero and 255; these settings can also be adjusted in the Curves window. By default, output levels for the white point are 255 for each channel, 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 in the White Balance and Curves palettes. 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.

Reset to Default
Click this button to restore settings in the Advanced Color tab to their default values.

The Grid Lines Tab

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.

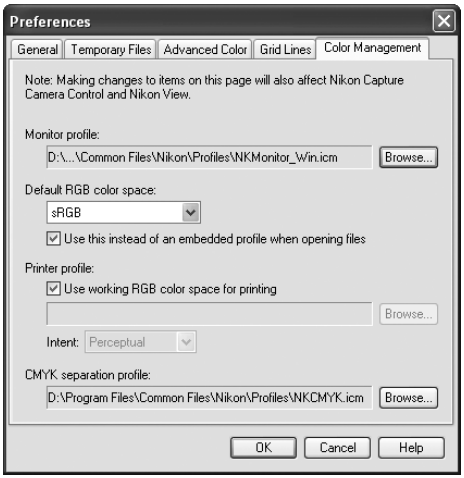
Display grid line every

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 Color Management Tab (Windows)



The Color Management 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.

Default RGB color space
The output color-space profile used when working with RGB images can be selected from sRGB, Bruce RGB, NTSC (1953), Adobe RGB (1998), CIE RGB, Adobe Wide RGB, Apple RGB, and Color Match RGB. If **Use this instead of an embedded profile when opening files** is checked, this RGB color space profile will be used for all images. If it is not checked, the profile embedded in each image will be used.

Printer profile
Specifies the printer profile to be used when printing images. To use the current RGB color-space profile, check **Use profile for printing**. To choose a printer profile, remove the check from **Use profile for printing** and click the **Browse…** button. If you have chosen to use a printer profile, the type of matching to be performed can be selected from **Relative** and **Perceptual**. (Depending on the profile, changing the matching method may produce no change in output. This option is not supported with some profiles; consult the manufacturer for details.)

Relative
If the image contains colors not in the gamut of the selected printer profile, all colors in the image will be compressed to fit the gamut.

Perceptual
Colors not in the gamut of the selected printer profile will printed using the closest colors available. Other colors are not affected.

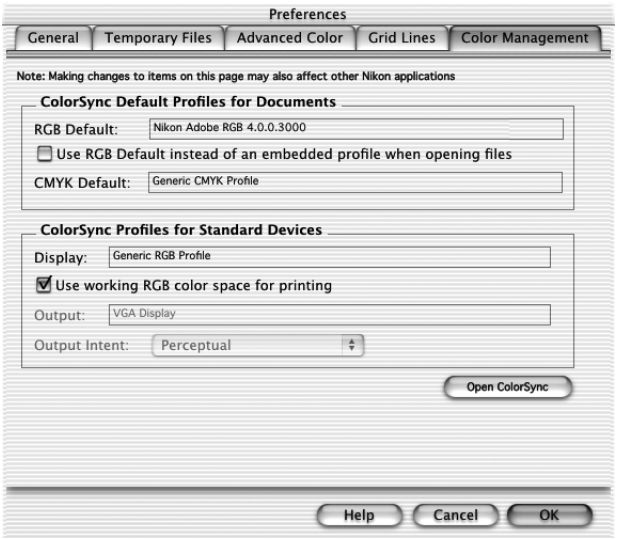
CMYK separation profile
The profile used when converting RGB images to CMYK is displayed here. To choose a different profile, click the **Browse…** button.

Supported Color Profiles

Nikon Capture 3 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.

The Color Management Tab (Macintosh)

The Macintosh version displays the profile names selected in the ColorSync control panel (Mac OS 9) or in System Preferences (Mac OS X).



ColorSync Default Profiles for Documents

The default color-space profiles are displayed in this area. Clicking the **Open ColorSync** button opens the ColorSync dialog, where you can choose the default profiles for the RGB and CMYK color spaces.

RGB default

Lists the output ICC color-space profile used when working with RGB images. If **Use RGB default instead of an embedded profile when opening files** is checked, this RGB color space profile will be used for all images. If it is not checked, the profile embedded in each image will be used.

CMYK default

Lists the profile used to convert images to CMYK when they are saved as TIFF-CMYK.

The Color Management Tab

Changes to settings in the Color Management tab also apply to Nikon Viewer and Nikon Capture 3 Camera Control. Nikon Capture 3 must be restarted before changes to settings will take effect.

RGB Color-Space Profiles

See page 282 for more information on the standard color-space profiles supported under Nikon Capture 3.

The Information Palette

The color-space profile for the image in the active window is displayed in the Information palette (171).

ColorSync Profiles for Standard Devices

The default output color-space profiles for output devices are listed here. Clicking the **Open ColorSync** button opens the ColorSync dialog, where you can choose the default profiles for monitors and printers.

Display

Lists the monitor profile used to adjust colors for output on your monitor.

Use working RGB color space for printing

If this box is checked, the default RGB color space is used for printing.

Output

Lists the name of the output profile used for printing images when the **Use working RGB color space for printing** box is not checked. Note that CMYK profiles can not be used in Nikon Capture 3; if a CMYK profile is selected, the status of the **Use working RGB color space for printing** check-box can not be changed.

Output intent

If you have chosen to use a printer profile, the type of matching to be performed can be selected from **Relative** and **Perceptual**. (Depending on the profile, changing the matching method may produce no change in output. This option is not supported with some profiles; consult the manufacturer for details.)

Relative

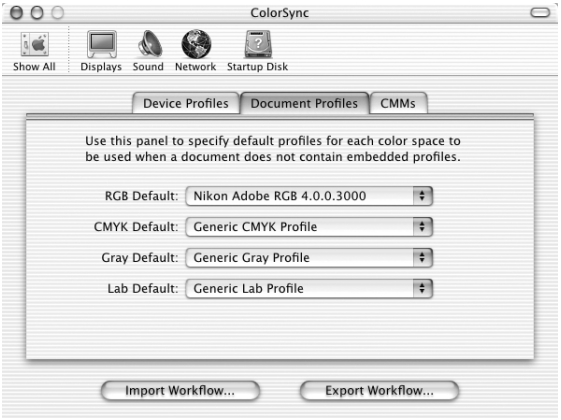
If the image contains colors not in the gamut of the selected printer profile, all colors in the image will be compressed to fit the gamut.

Perceptual

Colors not in the gamut of the selected printer profile will printed using the closest colors available. Other colors are not affected.

Open ColorSync

Opens the ColorSync control panel (OS 9) or System Preferences (OS X), where you can choose the color profiles used.



ICC Version 4 Profiles (Macintosh)

Nikon Capture 3 does not support profiles that conform to version 4 of the ICC standard. If a version 4 profile is selected, Nikon Capture 3 will default to the following profiles:

- Default RGB Color Space: Nks.RGB.icm
- Default CMYK Profile: Nks.CMYK.icm
- Display: NkMonitor_Mac.icm
- Output: the status of the **Use working RGB color space for printing** check-box can not be changed.

Nikon Capture 3 Camera Control

Capturing Photographs

Using the Camera Control component of Nikon Capture 3, you can control almost all aspects of camera operation remotely from your computer. If Camera Control is running when a D100 camera is connected, or a D1-series camera is connected and set to PC mode, pictures taken with the camera will be stored on your computer hard disk, not the camera memory card. The camera can be operated either directly or using the controls in the Camera Control window. Camera settings are displayed in Camera Control.

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
Read this section for a description of the controls in the Nikon Capture 3 Camera Control window, as well as for information on launching and closing the Camera Control window, capturing photographs to disk, processing photographs as they are captured, time lapse photography, and custom settings.

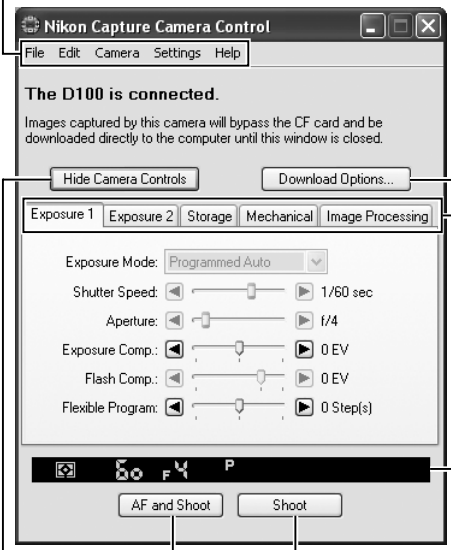
Nikon Capture 3 Camera Control Preferences
This section details the options available in the Camera Control Preferences dialog.

The Camera Control Window

Getting to Know Nikon Capture 3 Camera Control

The main parts of the Camera Control window are identified below.

Menu bar
Use to open the Live Batch and Time Lapse Photography windows, adjust camera settings, and to set Camera Control Preferences.



Download Options button
Click this button to choose a destination for photographs captured from the camera.

Camera control page selection tabs
The menus, sliders, and buttons on each tab are used to control camera settings.

Simulated LCD panel
Performs the same function as the information display in the camera viewfinder.

Shoot buttons
Click these buttons to take pictures.

Hide Camera Controls button
Click this button to hide the camera control panels in the Nikon Capture Camera Control window.

Macintosh Computers

Nikon Capture 3 Camera Control is not available when the D100 is connected to a Macintosh computer, or when a D1-series camera is connected to a Macintosh running Mac OS X version 10.1.4 or earlier.

Camera Control

Changes made to settings in the Nikon Capture 3 Camera Control window only apply to photographs taken after the changes are made, not to photographs that have already been taken.

If no camera is connected when Nikon Capture 3 Camera Control is launched, a warning will be displayed.

Click **OK** to close the warning and display the following window. Preferences can be adjusted using the options in the menu bar.

Download Options button
Click this button to choose a destination for photographs captured from the camera.

Starting Nikon Capture 3 Camera Control

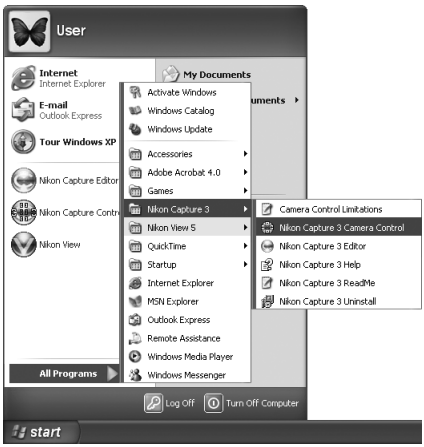
Nikon Capture 3 Editor can be started by selecting **Show** (or **Launch**) **Nikon Camera Control** from the **Tools** menu in Nikon Browser, Nikon Viewer, or Nikon Capture 3 Editor, or by clicking the button in the Nikon Capture 3 Editor Quick Tools palette. You can also start the Editor directly by selecting Nikon Capture 3 Editor from the **Start** menu (Windows) or double-clicking the application icon (Macintosh).

Windows

1 Connect the camera
Connect the camera to your computer and turn the camera on. If you are using a D1-series camera, choose "PC" as the operating mode.

2 Close Nikon Transfer
If Nikon Transfer starts, click the **Close** button.

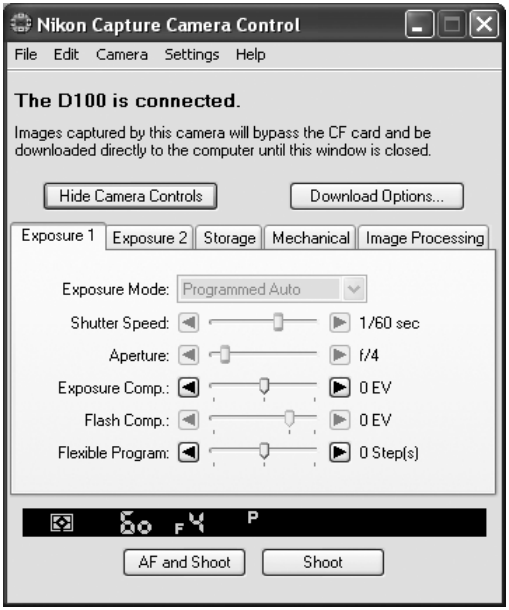
3 Start Nikon Capture 3 Camera Control
From the **Start** menu, select **Nikon Capture Camera Control** (Windows XP) or **Programs** > **Nikon Capture 3** > **Nikon Capture 3 Camera Control** (other Windows versions).



Connecting the Camera

For information on connecting the camera to a computer, see the documentation provided with your camera.

The Camera Control window will be displayed.



Macintosh

1 **Connect the camera**
Connect the camera to your computer and turn the camera on. If you are using a D1-series camera, choose "PC" as the operating mode.

2 **Close Nikon Transfer**
If Nikon Transfer starts, click the **Close** button.

3 **Start Nikon Capture 3 Camera Control**
Double-click the Nikon Capture 3 Camera Control icon in the folder to which you installed Nikon Capture 3.

The Camera Control window will be displayed.

Serial Number

If prompted to supply a serial number when starting Nikon View 5, Nikon Capture 3 Editor, or Nikon Capture 3 Camera Control, enter the serial number for Nikon Capture 3.

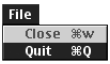
Other Ways of Starting Camera Control

Nikon Capture 3 Editor can be started by double-clicking the Nikon Capture 3 Camera Control icon in the folder to which you installed Nikon Capture 3 (Windows, Mac OS 9). If Nikon Capture 3 was registered in the Dock during installation, Mac OS X users will be able to start Nikon Capture 3 Editor by clicking the Nikon Capture 3 Camera Control icon in the Dock.

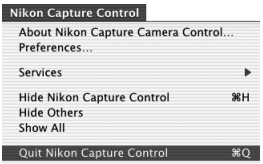
Exiting Nikon Capture 3 Camera Control

To close the Nikon Capture 3 Camera Control window, open the **File** menu and choose **Exit** (Windows) or **Quit** (Mac OS 9). In Mac OS X, select **Quit Nikon Capture** from the Nikon Capture menu.

Windows



Mac OS 9

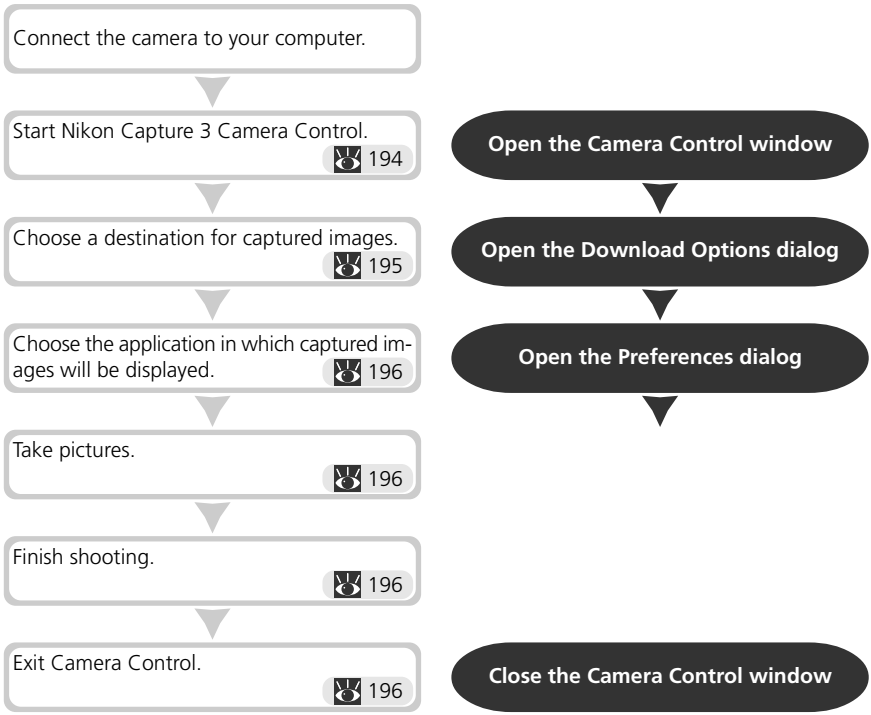


Mac OS X

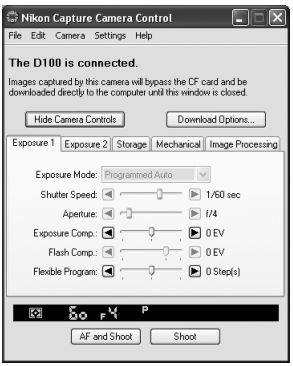
For information on disconnecting your camera from your computer, see the user's manual provided with your camera.

Capturing Photographs to Disk

If Nikon Capture 3 Camera Control is running when a D100 camera is connected, or a D1-series camera is connected and set to PC mode, pictures taken with the camera will be stored on your computer hard disk, not the camera memory card.

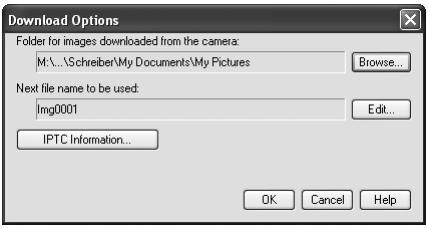


1 **Start Nikon Capture 3 Camera Control (190)**
Connect the camera to your computer and turn the camera on. If you are using a D1-series camera, set the operating mode to PC.



2 Display the Download Options dialog

Click **Download Options** in the Camera Control window. The following dialog will be displayed.



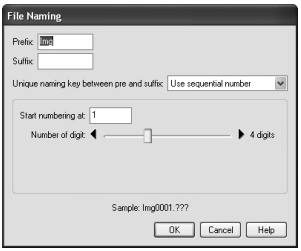
3 Choose a destination and file naming for captured images

Folder for images downloaded from camera

Use this area to select the folder to which photographs will be downloaded as they are taken.

Next file name

This area is used to specify how photographs captured from the camera will be named as they are saved to disk. To choose how files are named, click **Edit**. The dialog shown at right will be displayed. Using the sample file name as your guide, enter a prefix and suffix and choose the starting number and number of digits for automatic sequential file numbering.



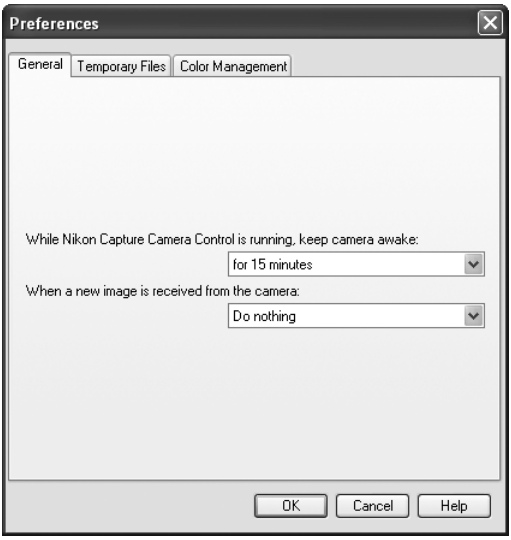
File information

Clicking this button displays a dialog where you can select the IPTC information, including keywords and captions, that will be added to images as they are captured. For more information, see "Nikon Transfer" (22).

After adjusting the above options, click **OK** to exit the dialog and apply settings to subsequent photographs.

4 Choose the application that will be used to display photographs after shooting

Select **Preferences...** from the **Edit** menu (Windows, Mac OS 9) or the application menu (Mac OS X). When the Preferences dialog is displayed, click the General tab.



From the pull-down menu under **When a new image is received from the camera**, choose **Do nothing**, **View it with Nikon View**, or **Show it in Nikon View Browser** . Click **OK** to close the Preferences dialog.

5 Take pictures

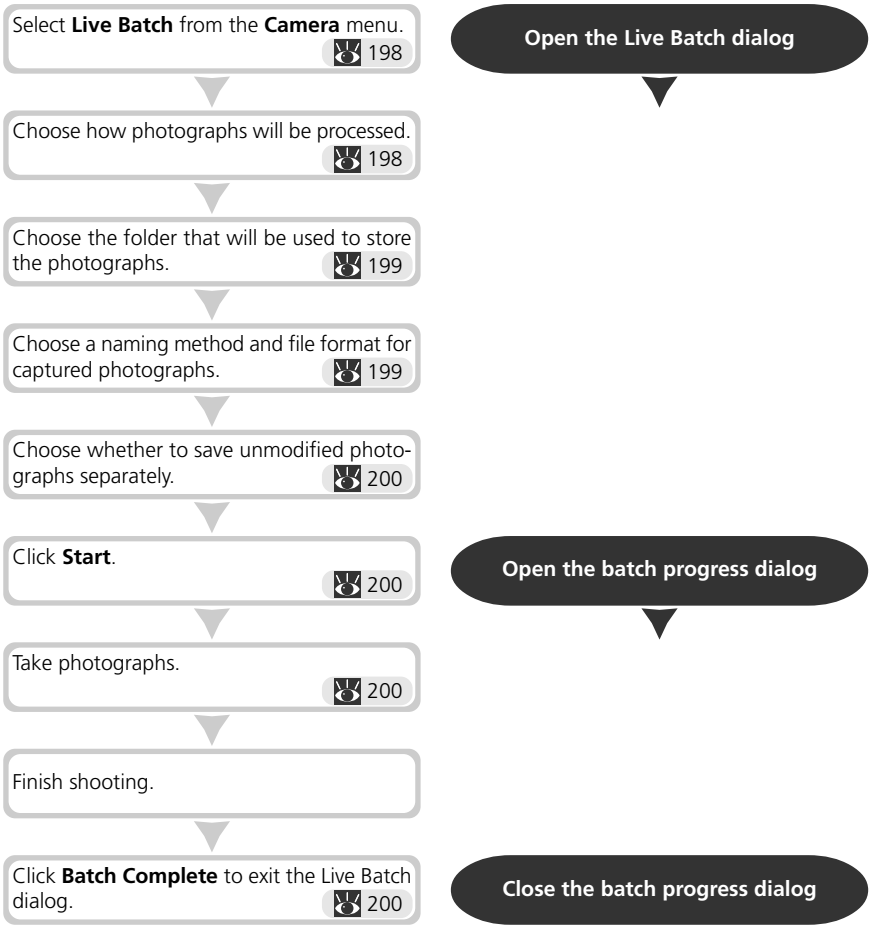
Take pictures using the camera shutter-release button or the **AF & Shoot** or **Shoot** buttons in the Camera Control window. If **View it with Nikon Viewer** or **Show it in Nikon Browser** is selected for **When a new image is received from the camera** in the General tab of the Preferences dialog, photographs will be opened in Nikon Viewer or Nikon Browser as they are taken.

6 Exit Nikon Capture 3 Camera Control

To exit Nikon Capture 3 Camera Control, click the close button in the title bar of the Nikon Capture Camera Control window.

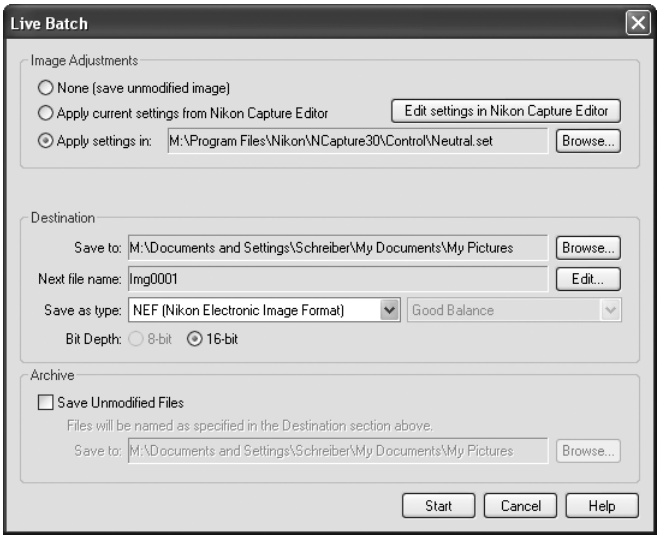
Processing Photographs as They Are Captured

This section describes how live batch processing 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" (214).



1 Display the Live Batch dialog

Select **Live Batch** from the Camera Control **Camera** menu. The Live Batch dialog will be displayed.



2 Specify how captured images will be processed

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

None (save unmodified image)

Select this option to save images exactly as captured from the camera, without modification.

Apply current settings from Nikon Capture Editor

Select this option to process images using the settings currently in effect in the White Balance Adjustment, Advanced RAW, Curves, Color Adjustment, Unsharp Mask, Noise Reduction, and Size/Resolution windows in Nikon Capture 3 Editor. To open Nikon Capture 3 Editor and adjust settings, click the **Launch Nikon Capture Editor** button.

Apply settings in

Select this option to process the images using joint settings created using the **Save...** option in the Nikon Capture 3 Editor **Settings** > **Image Adjustment** menu (207). When this option is selected, a joint settings file can be selected by clicking the **Browse...** button to its right.

Live Batch Processing

Live batch processing is used to perform the operations specified in the Image Enhancements section of the Live Batch dialog on all images captured from the camera. 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.

3 Choose a destination for captured images

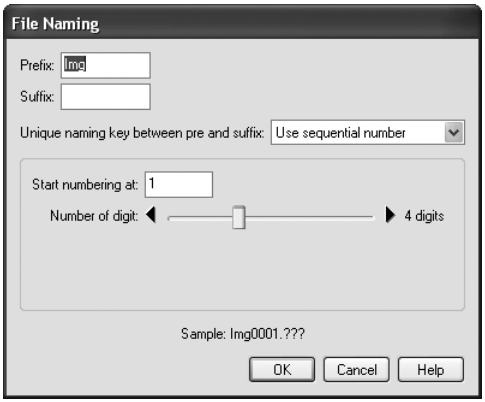
In the Destination section, choose options for saving the processed images.

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 **Browse...** button. The File Naming dialog will be displayed. For more information, see "Nikon Transfer" (31).



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 Formats" (208).

Bit depth

Choose the bit depth (the number of bits of color information per channel for each pixel in the image) at which files will be saved. The 16-bit option is only available if the selected file type is NEF or TIFF (RGB) and the original image has a bit depth of over eight bits.

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.

4 Choose whether to save original photographs

In the Archive section, choose whether to save the original, unprocessed photographs.

Save Unmodified Files

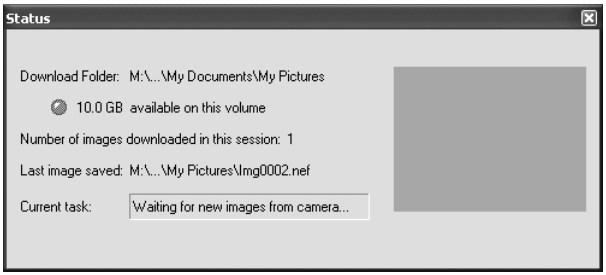
Check this option to save both the original image and copies processed according the options selected in the Image Enhancement section.

Save to

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

5 Click **Start**

Click **Start** to put the selected settings into effect. A progress dialog will be displayed.



6 Take photographs

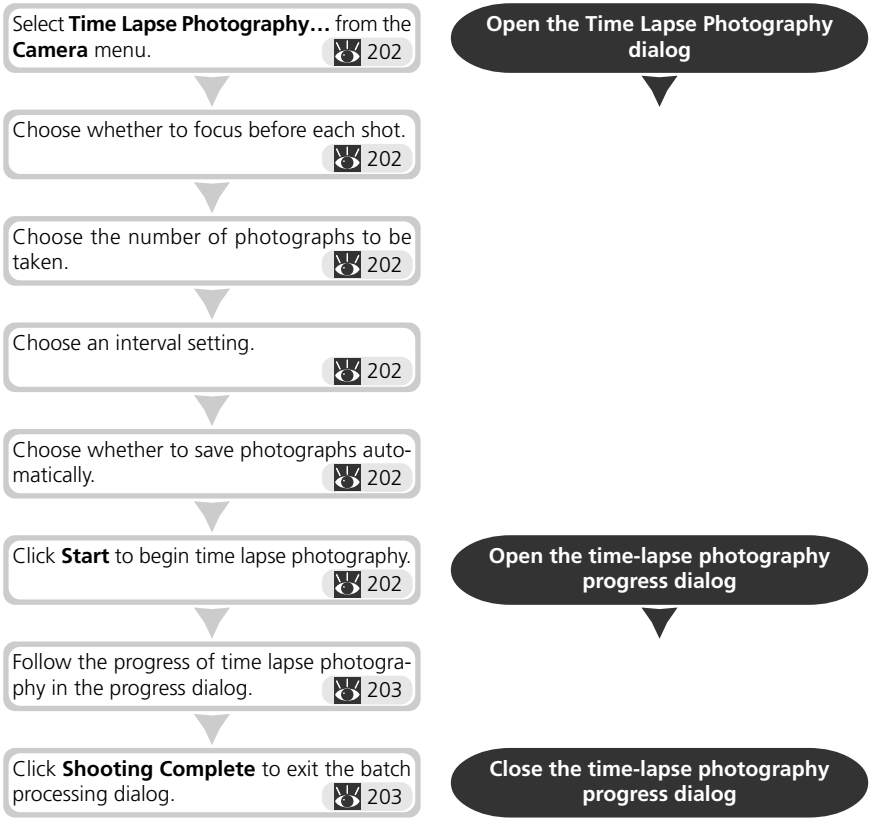
Take photographs as described in the camera *User's Manual*.

7 End batch processing

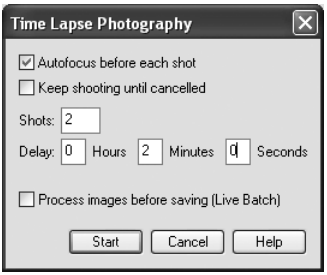
Once you have finished taking photographs, click **Batch Complete** to end batch processing.

Time Lapse Photography

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



1 Display the Time Lapse Photography dialog
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 Specify 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 Click **Start**
Click **Start**. To process images as they are taken, check the **Process images before saving (Live Batch)** option in the Time Lapse Photography dialog and click **Next**. The Live Batch dialog will be displayed; adjust settings and click **Start** to begin time lapse photography.

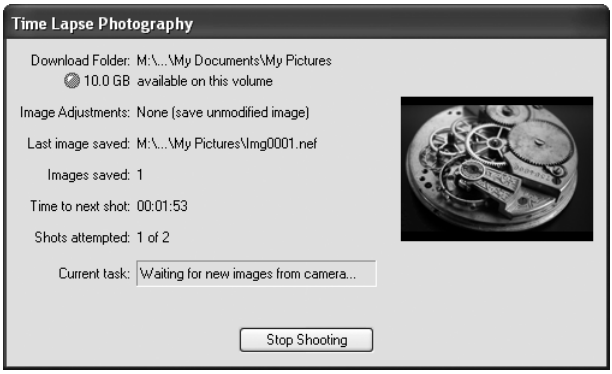
Time Interval Settings

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.

The Time Lapse Photography Dialog

If you make a mistake in entering settings in the Time Lapse Photography dialog, a warning will be displayed. Return to the Time Lapse Photography dialog and adjust settings as directed.

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.

Auto Off (D1-Series Cameras)

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 (223), 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

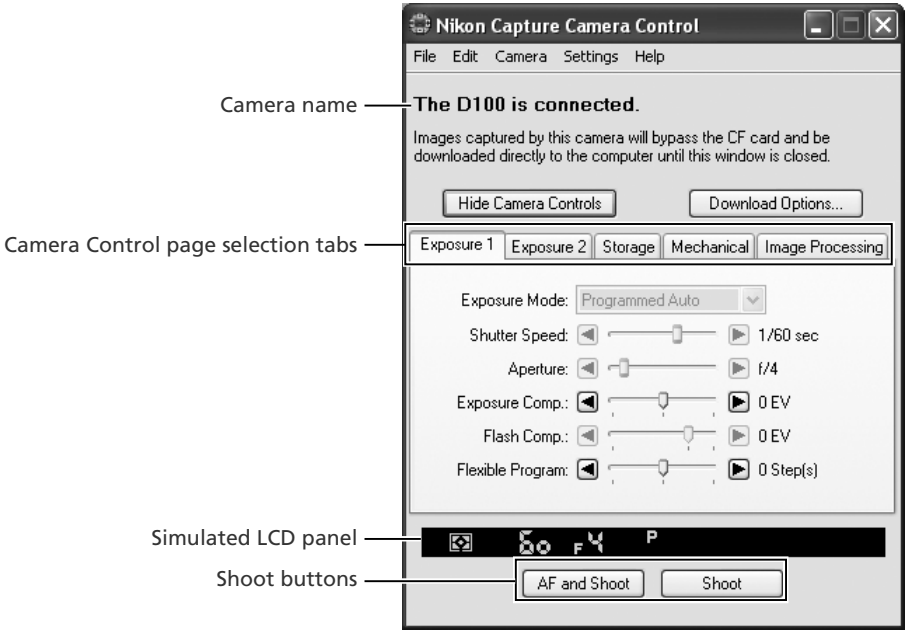
No other operations can be performed until the Time Lapse Photography dialog is closed.

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.

The Nikon Capture 3 Camera Control Window

The Nikon Capture 3 Camera Control window shows current camera settings, which may be viewed by clicking the five page selection tabs. Camera settings can be altered using the controls in each tab as described below. The simulated LCD panel and the **Hide Nikon Capture 3 Camera Control**, **Download Options**, and shoot buttons can be accessed from all five tabs.



Hide Camera Control
Click this button to hide the Camera Control panels during shooting.

Download Options
Click this button to choose a destination and file name for pictures captured from the camera.

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 Nikon Capture 3 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 a D1-series 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.

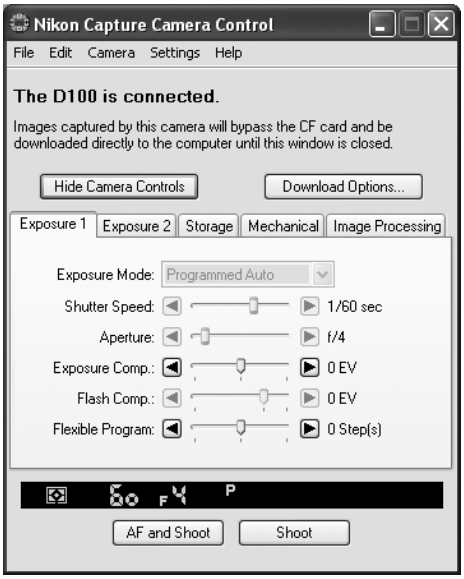
Camera Settings That Can Not Be Adjusted from Nikon Capture

The following operations can not be performed from Nikon Capture 3 Camera Control:

	Operation	Camera
Status not displayed	Taking continuous photographs in continuous shooting mode	D1-series/D100
	Continuous servo autofocus	D1-series/D100
	Shutter-speed lock	D1-series
	Aperture lock	D1-series/D100
	Autoexposure lock	D1-series/D100
	Pressing the shutter-release button halfway to check focus	D1-series/D100
	Manual aperture adjustment using the lens aperture ring	D1-series
	Reactivating the camera after it has entered sleep mode	D1-series/D100
	Depth-of-field preview	D1-series/D100
	Auto bracketing	D1-series/D100
	Compression options for NEF (RAW) images	D100
Status displayed	Focus mode	D1-series/D100
	Metering	D1-series/D100
	Exposure mode	D100
	Shooting mode	D100

The Exposure 1 Tab

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



Exposure Mode

This menu can be used to set the exposure mode for D1-series cameras. It can not be used to set exposure mode for the D100.

Shutter Speed

Shutter speed can only be adjusted in **Manual** and **Speed Priority** modes, when it can be set to values between the maximum and minimum values supported by the camera. 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 (221) has been set to allow aperture to be adjusted manually using the lens aperture ring (D1-series only).

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.

Flash Comp. (D100 only)

This option is used to adjust the level of the D100's built-in Speedlight.

Flexible Program

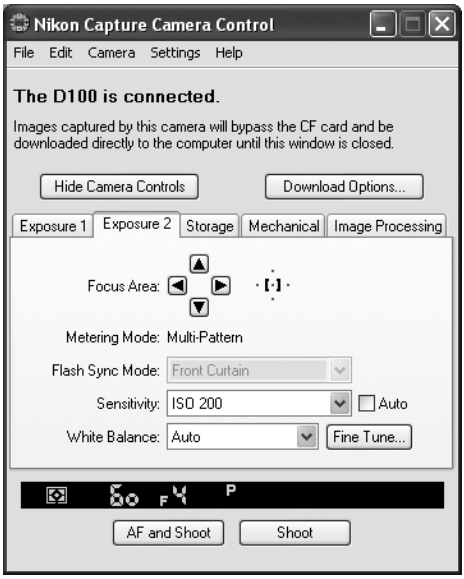
Flexible program can only be used in Program Mode, when it allows you to choose from predetermined combinations of shutter speed and aperture appropriate to current lighting conditions.

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 3, 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 Exposure 2 Tab

The following settings can be adjusted from the Exposure 2 tab. See the camera manual for details:



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 (260).

Metering Mode

This text box shows the current metering mode. Note, however, that the metering mode can not be changed from Nikon Capture 3.

Flash Sync Mode

This option controls the camera flash sync mode.

Sensitivity

Sensitivity (ISO equivalency) can be raised when taking photographs in low light conditions. See the user's manual provided with your camera for details.

Auto (D100 only)

When this option is checked, the camera will adjust sensitivity (ISO equivalency) automatically (ISO auto).

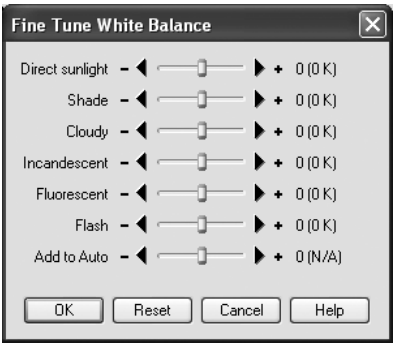
White Balance

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:

Option	Description
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.

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 will be added to the white balance setting chosen by the camera.

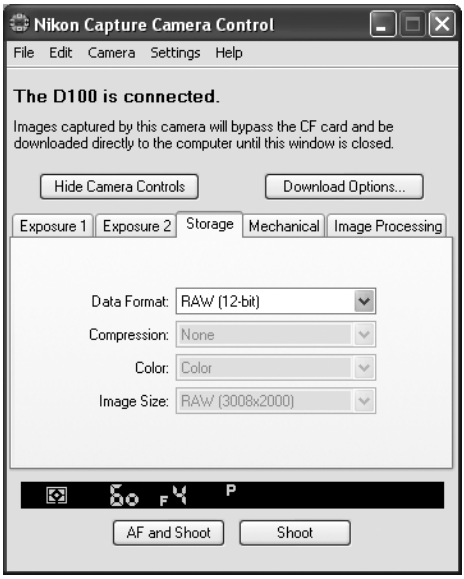
Clicking the **Reset** button returns all values to defaults. Click **OK** to apply the current settings to the camera, or click **Cancel** to discard any changes and return to the Nikon Capture 3 Camera Control window.

White Balance

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

The Storage Tab

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)** (D1-series only), 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 D1h at a data format setting of **RAW (12-bit)**, you can choose from a settings of **None** or **Lossless**. If **RAW (12-bit)** is selected when the D100 is attached, images will be saved in uncompressed format, regardless of the compression option selected with the camera.

Color

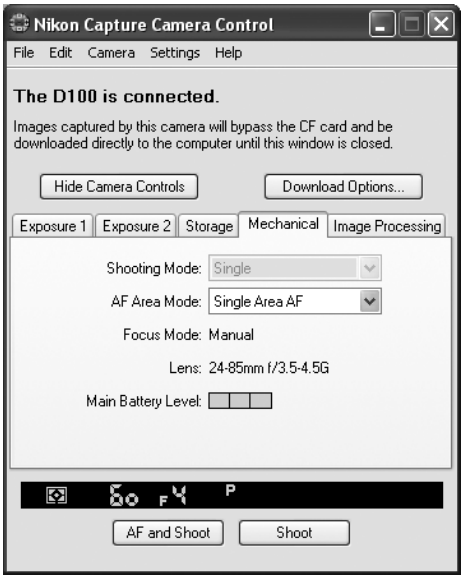
Choose from **Color** and **Black & White** (D1-series only). **Black & White** is not available with the D100 or when **RAW** is selected for **Data Format**.

Image Size

If you are using the D1 or D1h, image size will be fixed at **Medium (2000 × 1312)**. The D1x offers a choice of **Large (3008 × 1960)** and **Medium (2000 × 1312)**, the D100 a choice of **Large (3008 × 2000)**, **Medium (2240 × 1488)**, and **Small (1504 × 1000)** (when data format is set to **RAW (12-bit)**, image size for the D100 and D1x is fixed at **Large**).

The Mechanical Tab

The following settings can be adjusted from the Mechanical tab:



Shooting Mode

Sets the shooting mode for D1-series cameras in PC mode to **Single** or **Continuous**. The advance rate for continuous mode can be set using Custom Setting 25 (221). Changes to the shooting mode are reflected in Custom Setting 30.

AF Area Mode

AF area mode can be set to **Single Area AF** or **Dynamic Area AF**. See the camera manual for details.

Focus Mode

The current focus mode setting is displayed. See the camera manual for details. This setting can not be changed from Nikon Capture.

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

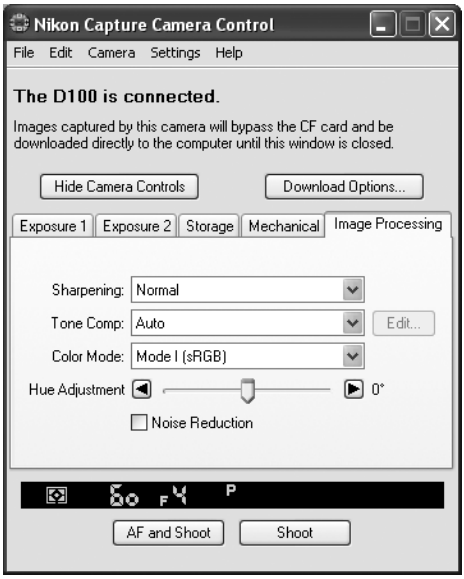
Displays the level of the main camera battery. Green indicates that the battery has enough charge for continued operation. Yellow indicates that battery level is low; ready a fully charged spare battery pack. Red indicates that the battery is exhausted, and that no further photographs can be taken until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

Clock Battery Level (D1-series only)

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).

The Processing Tab

The following settings can be adjusted from the Processing tab:



Sharpening

This option controls how much the camera sharpens outlines. See the camera manual for details.

Tone Compensation

This setting controls contrast. See the camera manual for details.

Color Mode (D1X, D1H, and D100 only)

The D100, D1X, and D1H offer a choice of color modes. See the camera manual for details. With the D1, colors are optimized for the NTSC color space, regardless of the option chosen for color mode.

Hue Adjustment (D1X, D1H, and D100 only)

Use to modify hue while leaving brightness and chroma unaffected. Adjustments can be made in the range –9 ° to 9 °, with 0 ° representing the original hues as recorded by the camera (in D1-series cameras, –9 ° is equivalent to a camera hue setting of 0, 0 ° to a setting of 3, and 9 ° to a setting of 6).

Noise Reduction (D100 only)

At shutter speeds slower than $^1/_2$ s, "noise" in the form of randomly-spaced, brightly-colored pixels may appear in photographs, particularly in shadows. Select **ON** to reduce noise.

Saving and Loading Camera Control Settings

The **Camera Control** option in the **Settings** menu is used to save Nikon Capture 3 Camera Control settings and to load and apply previously saved settings.

Option	Description
Load Camera Settings...	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 (only files with the extension ".ncc" will be displayed). The settings in the Camera Control window will instantly revert to the saved settings.
Save Camera Settings...	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. Camera settings are saved with the extension ".ncc".

The Camera Menu

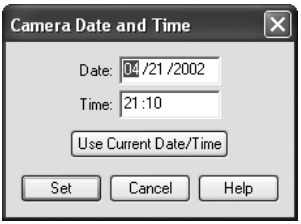
The commands in the **Camera** menu are used to adjust the following camera settings:

Custom Settings...

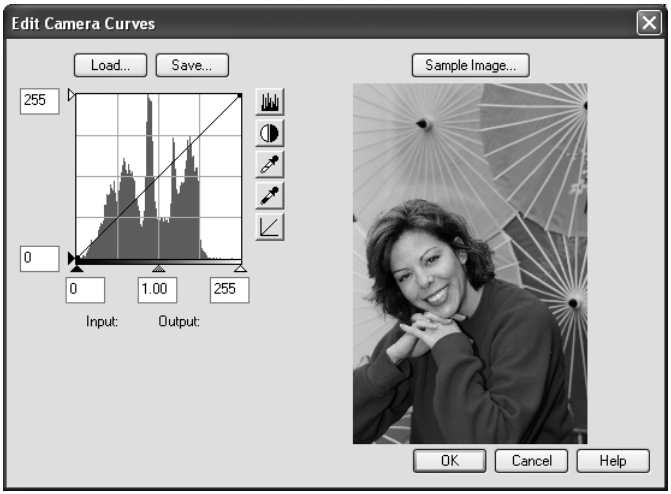
Selecting this option opens the Custom Settings dialog (215), where camera Custom Settings can be adjusted.

Set Date and Time...

Selecting this option opens the dialog shown at right, where you can set the camera's clock calendar to the current date and time. To view the current time and date settings, click **Use Current date/Time**. Click **OK** to set the clock calendar to the time and date shown.



Edit Camera Curves... (Windows only)
This option is used to create a custom tone compensation curve and download it to the camera, where it applies when "Custom" is selected for the camera tone compensation option.

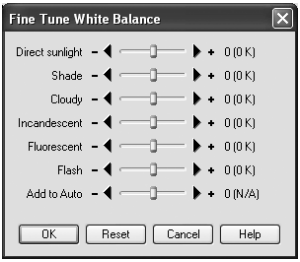


The controls in the Edit Camera Curves window are identical to those in the Curves window, except in the following respects: (1) only the master channel, not individual RGB channels, may be edited; (2) there is a limit of 20 spline points; (3) the midpoint may not be edited; (4) a user-defined sample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

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). Look for files with the ".ncv" extension.

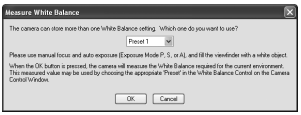
The **Save...** button opens the "Save As" dialog, where you can save the current curve.

Fine-Tune White Balance...
Selecting this option displays the dialog shown at right, where white balance for each of the seven fixed white balance options can be fine-tuned between –3 and +3. 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 Nikon Capture 3 Camera Control window.

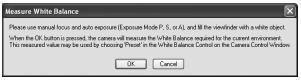


Measure White Balance...

Use this option to measure preset white balance. If the camera currently connected supports multiple values for preset white balance, the setting that will be used to store the measured value can be chosen from the pop-up menu at the top of the dialog. Adjust camera settings as described in the section on preset white balance in the camera user's manual and click **OK** to measure a value for white balance.



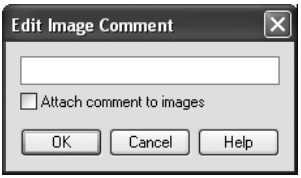
D1x/D1h



D100

Edit Image Comment...

Selecting this option displays the dialog shown at right, where you can enter a comment or title for subsequent photographs. If the camera currently connected is in the D1-series, enter a title of thirty-eight characters or less and click **OK**. The title will be used for all subsequent photographs taken while the camera is connected. When a D100 camera is connected, the title is stored in the camera as an image comment of thirty-six characters or less which is appended to photographs only when the **Append Comment** box is checked.

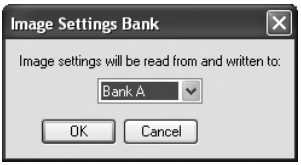


D100

D1-series

Select Shooting Settings Bank... (D100 only)

Selecting this option displays the dialog shown at right, where can choose the shooting menu bank (D100 only) in which changes to settings will be stored while the camera is controlled from Nikon Capture 3 Camera Control. For more information, see the D100 user's manual.



Live Batch...

Selecting this option opens the Live Batch dialog (197).

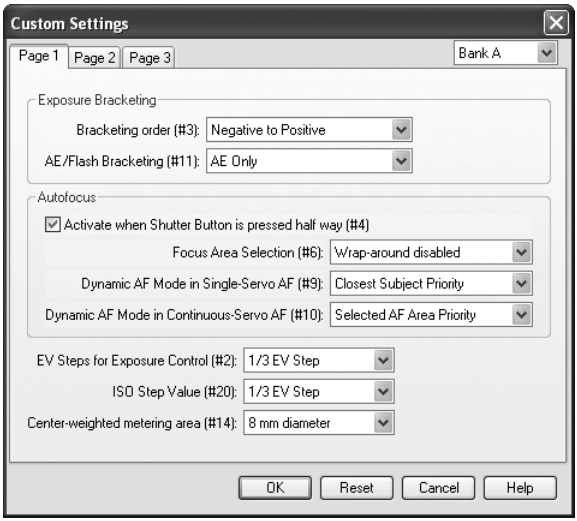
Time Lapse Photography...

Selecting this option opens the Time Lapse Photography dialog (201).

Custom Settings

Most of the custom settings stored in camera memory can be viewed and adjusted from the Custom Settings window in Nikon Capture 3 Camera Control. For more information on Custom Settings, see the documentation provided with your camera.

1 Select **Custom Settings...** from the **Camera** menu
The Custom Settings dialog will be displayed.



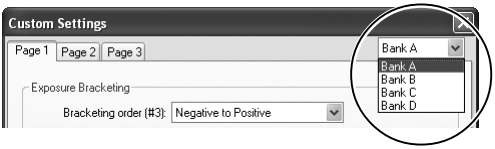
The Custom Settings dialog shows the Custom Settings currently in effect.

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.

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 or D100 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**

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. Depending on the model of camera connected, some Custom Settings may not be available.

Custom Settings

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

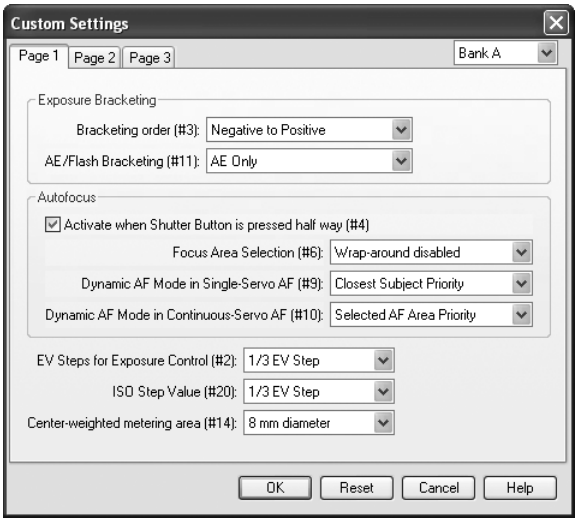
Settings That Can Not Be Adjusted from the Custom Settings Window

The Custom Settings listed below can not be adjusted in the Custom Settings window.

- Mirror lock-up for CCD cleaning (D1-series Custom Setting 8) /Cleaning mirror up (D100 setup menu): can only be adjusted from the camera
- RAW (NEF) image save (D1-series Custom Setting 28): 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.
- ISO Auto (D100 Custom Setting 3) /ISO Boost (D1-series Custom Setting 31): can be adjusted from the Exposure 2 tab of the Camera Control window.
- PC Shooting Mode (D1-series Custom Setting 30): this option is adjusted from the Mechanical tab of the Camera Control window.
- Tone Compensation (D1-series Custom Setting 24) /Color Mode (D1X/D1H Custom Setting 32) /Hue Adjustment (D1X/D1H Custom Setting 33) /Noise Reduction (D100 Custom Setting 4): can be adjusted from the Processing tab of the Camera Control window.

The Page 1 Tab

The Page 1 tab contains the following settings (the illustration shows the settings displayed when the D1x is connected):



The Auto Bracketing Area

Item	Camera	Custom Setting #
Bracketing order	D1-series	3
	D100	12
AE/Flash bracketing	D1-series	11
AE/WB/Flash bracketing	D100	11

The Autofocus Area

Item	Camera	Custom Setting #
Activate when shutter button is pressed halfway	D1-series	4
Focus area selection	D1-series	6
	D100	17
Dynamic AF mode in single-servo AF	D1-series	9
	D100	20
Dynamic AF mode in continuous-servo AF	D1-series	10
	D100	21
Activate the AF-assist illuminator	D100	22

The Battery Pack Area (D100 with MB-D100 Multi-Function Battery Pack Only)

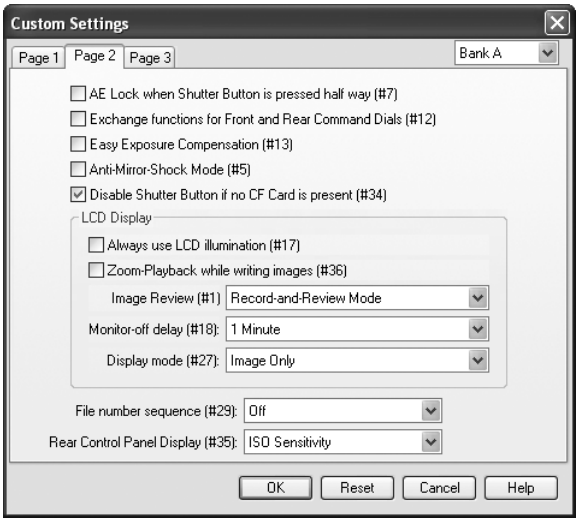
Item	Custom Setting #
AF button	25
Volume	26

Other Items

Item	Camera	Custom Setting #
EV steps for exposure control	D1-series	2
ISO step value	D1X/D1H	20
Center-weighted metering area	D1-series	14

The Page 2 Tab

The Page 2 tab contains the following settings (the illustration shows the settings displayed when the D1x is connected):



The Viewfinder Area (D100 Only)

Item	Custom Setting #
Focus area illumination	18
Show grid lines	19

The LCD Display Area

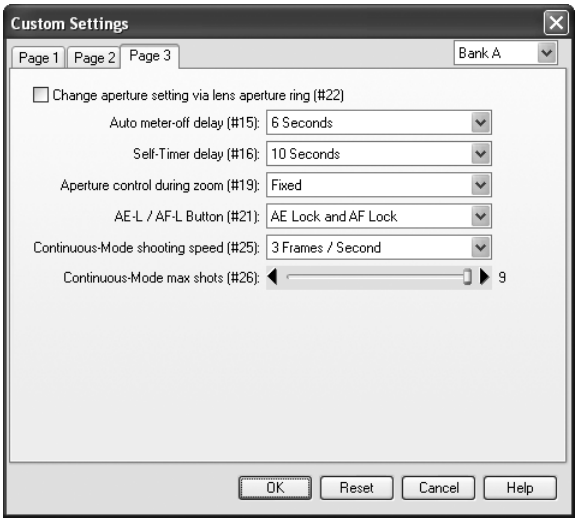
Item	Camera	Custom Setting #
Always use LCD illumination	D1-series	17
	D100	16
Zoom playback while writing images	D1x	36
Image review	D1-series/ D100	1
Monitor-off delay	D1-series	18
	D100	6
Display mode	D1-series	27

Other Items

Item	Camera	Custom Setting #
AE lock when shutter button is pressed halfway	D1-series	7
Exchange functions for front and rear command dials	D1-series	12
Easy exposure compensation	D1-series	13
Anti-mirror-shock mode	D1-series	5
Disable shutter button if no CF card is present	D1X/D1H	34
File-number sequence	D1-series	29
Rear control panel display	D1X/D1H	35

The Page 3 Tab

The Page 3 tab contains the following settings (the illustration shows the settings displayed when the D1x is connected):

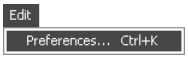


Item	Camera	Custom Setting #
Blink self-timer LED when shutter is released	D1	20
Change aperture setting via lens aperture ring	D1-series	22
Disable shutter button if no CF card present	D100	2
File-number sequence	D100	6
Easy exposure compensation	D100	10
Exchange functions for front and rear command dials	D100	13
AE lock when shutter button is pressed halfway	D100	15
Anti-mirror-shock mode	D100	24
Auto meter-off delay	D1-series	15
	D100	7
Self-timer delay	D1-series	16
	D100	8
EV steps for exposure control	D100	9
AE-L/AF-L button	D1-series	21
	D100	14
Flash mode	D100	23
Continuous mode shooting speed	D1-series	25
Continuous mode max shots	D1-series	26

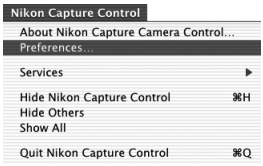
Nikon Capture 3 Camera Control Preferences

Fine-Tuning Nikon Capture 3 Camera Control

To view the Preferences dialog for Nikon Capture 3 Camera Control, select **Preferences...** from the **Edit** (Windows or Mac OS 9) or application (Mac OS X) menu.



Windows / Mac OS 9



Mac OS X

The Preferences dialog contains the following three tabs:

Tab	Description	
General	Choose the length of time the camera remains active when no operations are performed and the application used to open images after shooting.	223
Temporary Files	Specify the location of the folders used for temporary storage.	224
Color Management	Select the color profiles used by the Nikon Color Management System (CMS).	224

After making changes to preferences, click **OK** to save changes and return to the Nikon Capture 3 Camera Control window. Click **Cancel** to cancel any changes to settings and return to the Nikon Capture 3 Camera Control window.

Displaying Photographs after Capture

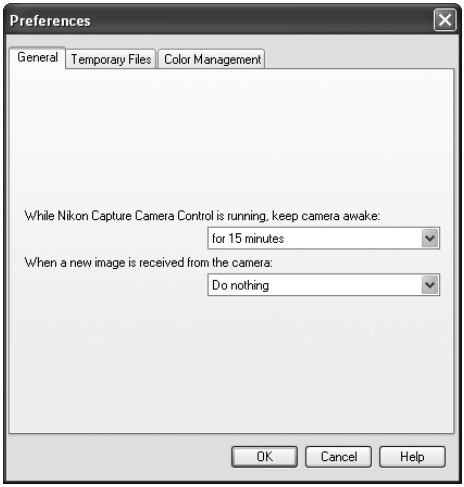
To display photographs after capture when **View it with Nikon View** or **Show it in Nikon Browser** is selected for **When a new image is received from the camera** in the General tab of the Camera Control Preferences dialog, select the **View captured image immediately** option in the Nikon Viewer **View** menu, or the **Select captured image immediately** option in the Nikon Browser **View** menu.

Viewing Preferences

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

The General Tab

The General tab contains the following items:



While application 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 Nikon Capture 3 Camera Control is running. This setting takes precedence over the auto meter off option chosen using camera Custom Settings. The D100 will stay awake indefinitely, regardless of the setting chosen here.

for 15 minutes (D1-series only)
The time before exposure meters turn off automatically is set to fifteen minutes.

Always
The camera stays awake indefinitely. Note that this will increase the drain on the battery.

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

When a new image is received from the camera

Choose the application that will be used to display photographs immediately after shooting.

Do nothing
Photographs are saved to the computer hard disk

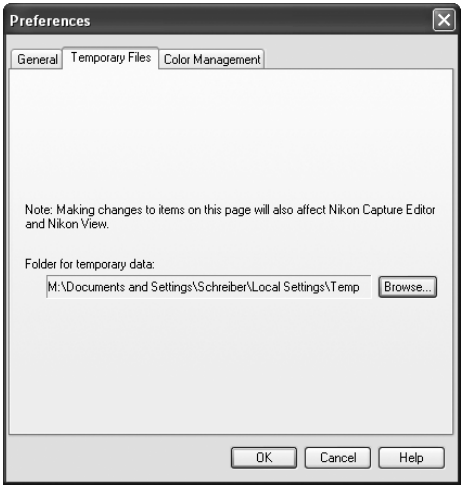
View it with Nikon View
The Nikon Viewer window will open (if Nikon Browser is not already running, Nikon Browser will start automatically). If the **Select captured image immediately** item is checked in the Nikon Browser **View** menu, the destination folder for captured images will be opened in Nikon Browser with the captured image selected. If the **View captured image immediately** item is checked in the Nikon Viewer **View** menu, the captured image will be displayed in Nikon Viewer. If neither option is selected, the captured image can be displayed in Nikon Viewer by clicking the Next button, and the destination folder can be opened manually in Nikon Browser using the Transfer Destination button.

Show it in Nikon Browser
Nikon Browser will start automatically. If the **Select captured image immediately** item is checked in the Nikon Browser **View** menu, the destination folder for captured images will be opened in Nikon Browser with the captured image selected. If **Select captured image immediately** is not selected, the destination folder can be opened manually in Nikon Browser using the Transfer Destination button.

The Temporary Files Tab

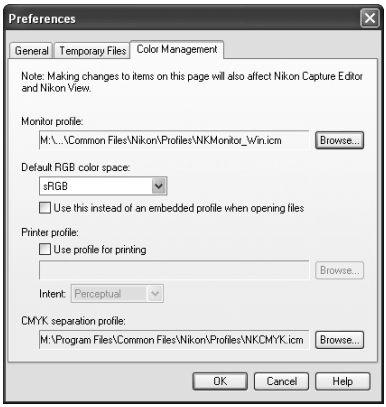
The Temporary Files tab contains the following item:

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.

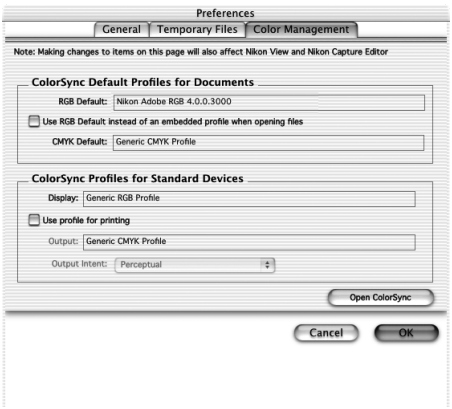


The Color Management Tab

For more information on the Color Management tab, see "Nikon Capture 3 Editor Preferences" (222).



Windows



Macintosh

Folder for Temporary Data

The folder chosen for temporary storage in the Temporary Files tab also applies to Nikon Capture 3 Editor and Nikon View. Changes will only take effect after the program has been restarted.

The Color Management Tab

Changes to settings in the Color Management tab also apply to Nikon Capture 3 Editor. Nikon Capture 3 must be restarted before changes to settings will take effect.

Appendices

Technical Notes

The appendices cover the following topics.

Appendix A: Supported Color Profiles
Read this section for a description of the RGB color-space profiles supported under Nikon Capture 3.

Appendix B: Color Matching in Adobe Photoshop
Learn how to preserve color-space profile information when opening images in Adobe Photoshop (version 5.0.2 or later).

Appendix C: Troubleshooting
Read this section for information on what to do when Nikon Capture 3 does not function as expected.

Appendix D: Glossary
Refer to this section when you are unsure of the meanings of the terms used in this manual.

Appendix A

Supported Color Profiles

1. Standard RGB Profiles Supported in Nikon Capture 3

1.1 Profiles with a Gamma Value of 1.8

Apple RGB (Nikon Apple RGB 4.0.0.3086)
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 (Nikon ColorMatch RGB 4.0.0.3086)
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 (Nikon sRGB 4.0.0.3086)
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 (Nikon Bruce RGB 4.0.0.3086)
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) (Nikon NTSC (1953) 4.0.0.3086)
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)."

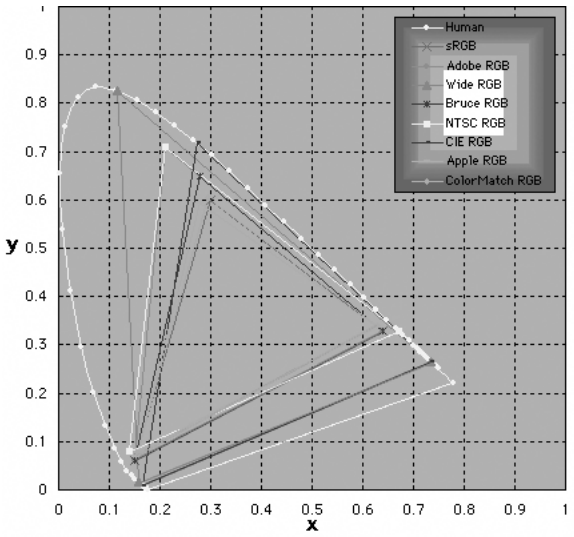
Adobe RGB (1998) (Nikon Adobe RGB (1998) 4.0.0.3086)
A color-space profile defined in Adobe Photoshop 5.0. It has a wider gamut than sRGB and includes the colors found in most CMYK gamuts, making it suitable for users involved in desktop publishing. The corresponding RGB setting in Adobe Photoshop 5.0 is "SMPTE-240M," the corresponding setting in Adobe Photoshop 5.5 or later "Adobe RGB (1998)."

CIE RGB (Nikon CIE RGB 4.0.0.3086)
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."

Adobe Wide RGB (Nikon Adobe Wide RGB 4.0.0.3086)
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 "Adobe Wide 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.

Gamut



2. Technical Data for RGB Profiles Supported in Nikon Capture 3

The following table shows the gamma values for profiles supported in Nikon Capture 3, 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	6500 K (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	5000 K (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	6500 K (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	6500 K (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)	6500 K (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
Adobe Wide RGB	5000 K (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	6500 K (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	5000 K (D_{65})	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 3 is opened in Adobe Photoshop, the profiles used in Adobe Photoshop should match those used in Nikon Capture 3. 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 3 can be used with Adobe Photoshop version 5.0.2 or later.

The first step is to match the Nikon Capture 3 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 3. For more information, see "Choosing a Monitor Profile" (230).

The next step is to save the image from Nikon Capture 3 using a format that supports inclusion of color profile information. If you save the image in TIFF, JPEG (JFIF), or JPEG (Exif), information about the color profile used in Nikon Capture 3 will be embedded in the file, and Adobe Photoshop will use this information to process colors appropriately when the file is opened. For more information, see "Adjusting Settings in Adobe Photoshop" (234).

ColorSync (Macintosh)

The explanation in this section assumes that ColorSync version 3.0 or later is installed on your Macintosh.

Step 1—Choosing a Monitor Profile

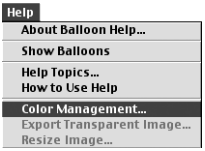
Choose a monitor profile as described below.

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 Display the Adobe Color Management Assistant
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 the folder listed below. Make a note of the file name.
• Windows\System\Color

4 Choose the profile created in Step 3 for Nikon Capture 3
Choose the profile created in Step 3 as the Nikon Capture 3 monitor profile. For details, see "Preferences: The Color Management Tab" (182).

Creating a Monitor Profile (Adobe Photoshop 6.0)

1 Start Adobe Gamma
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 the folder listed below. Make a note of the file name.
• Windows\System\Color

3 Choose the profile created in Step 2 for Nikon Capture 3
Choose the profile created in Step 2 as the Nikon Capture 3 monitor profile. For details, see "Preferences: The Color Management Tab" (182).

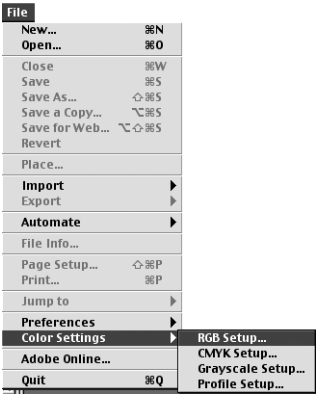
Using an Existing Monitor Profile

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)

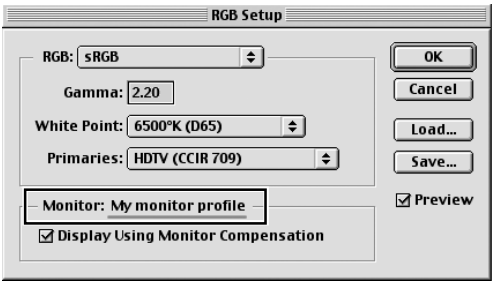
1 Display the RGB Setup dialog

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 the folder listed below.

- Windows\System\Color

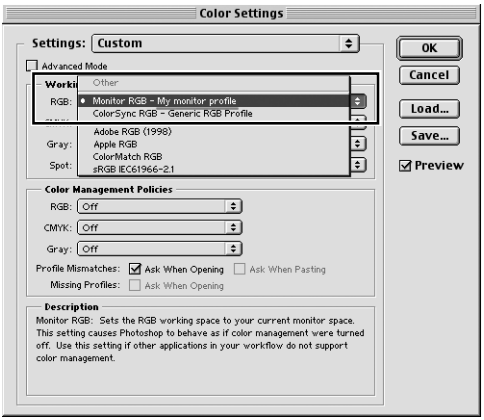
4 Choose the profile as the Nikon Capture 3 monitor profile

Choose the profile noted in Step 2 as the Nikon Capture 3 monitor profile. For details, see "Preferences: The Color Management Tab" (182).

Using an Existing Monitor Profile (Adobe Photoshop 6.0)

1 Display the Color Settings dialog
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 the folder listed below.
- Windows\System\Color

4 Choose the profile as the Nikon Capture 3 monitor profile
Choose the profile noted in Step 2 as the Nikon Capture 3 monitor profile. For details, see "Preferences: The Color Management Tab" (182).

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 230.

Step 2—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.

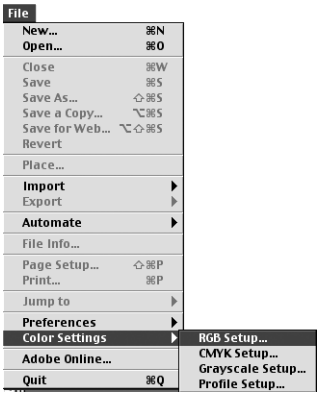
Opening TIFF, JPEG (JFIF), and JPEG (EXIF) Images Created Using Nikon Capture 3

Images saved in TIFF, JPEG (JFIF), and JPEG (EXIF) formats include color-space profile information. Open files in these formats as described below.

Opening TIFF and JPEG (JFIF) Images in Adobe Photoshop 5.x

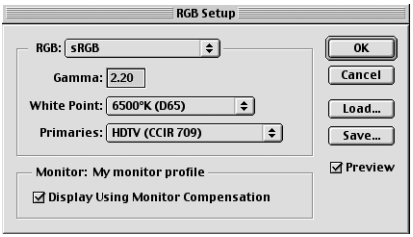
1 Display the RGB Setup dialog

Select **Color Settings** > **RGB Setup…** from the Adobe Photoshop **File** menu.



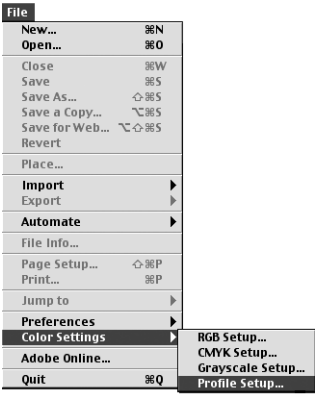
2 Check **Display Using Monitor Compensation**

In the Monitor section, check **Display Using Monitor Compensation**.

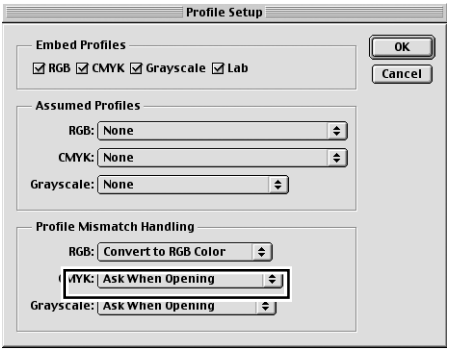


3 Close the RGB Setup dialog
Click **OK** to close the RGB Setup dialog.

4 Display the Profile Setup dialog
Select **Color Settings** > **Profile Setup...** from the Adobe Photoshop **File** menu.



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.

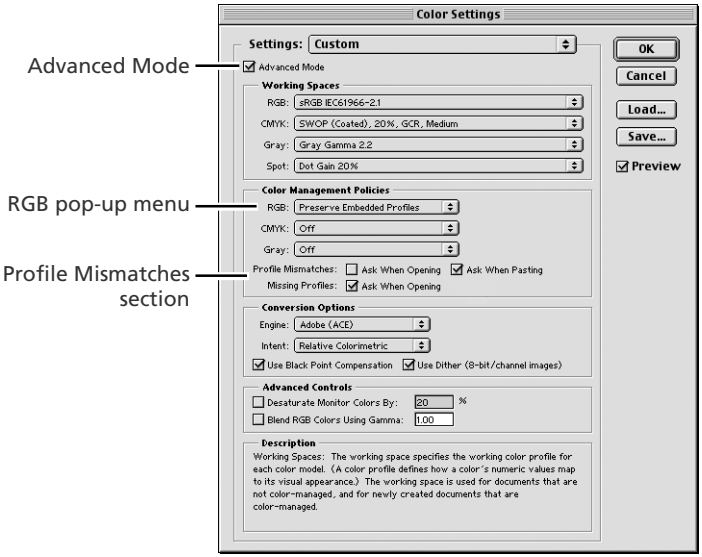


6 Close the Profile Setup dialog
Click **OK** to close the Profile Setup dialog.

Opening TIFF and JPEG (JFIF) Images in Adobe Photoshop 6.0

1 Display the Color Settings dialog
Select **Color Settings...** from the Adobe Photoshop **Edit** menu.

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 Close the Color Settings dialog
Click **OK** to close the Color Settings dialog.

At these settings, a warning may be displayed when an image is opened. To prevent the warning being displayed again, select the appropriate option in the warning dialog.

Nikon Capture 3 and Adobe Photoshop Color Profiles

Nikon Capture 3 output profile	Adobe Photoshop profile
sRGB (Nikon sRGB 4.0.0.3086)	sRGB
Apple RGB (Nikon Apple RGB 4.0.0.3086)	Apple RGB
Color Match RGB (Nikon Color Match RGB 4.0.0.3086)	Color Match RGB
Bruce RGB (Nikon Bruce RGB 4.0.0.3086)	—
NTSC (1953) (Nikon NTSC (1953) 4.0.0.3086)	NTSC (1953)
Adobe RGB (1998) (Nikon Adobe RGB (1998) 4.0.0.3086)	Version 5.5 or later: Adobe RGB (1998) Earlier versions: SMPTE-240M
CIE RGB (Nikon CIE RGB 4.0.0.3086)	CIE RGB
Adobe Wide RGB (Nikon Adobe Wide RGB 4.0.0.3086)	Version 5.5 or later: Adobe Wide RGB Earlier versions: Wide Gamut RGB

Appendix C

Troubleshooting

Should you encounter problems with Nikon Capture 3, check the list on the following pages before consulting your retailer or Nikon representative.

Nikon Capture 3 Does Not Start

Confirm that your computer system meets all of the requirements specified for using Nikon Capture 3 (OS, memory, hard disk capacity, etc.). See "Installing Nikon Capture 3."

Nikon Capture 3 Does Not Recognize the Camera

If the camera connected to the computer is in the D1 series, 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 in PC mode, and Nikon Capture 3 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 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 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 (D1-series cameras only)?
See the system requirements in "Installing Nikon Capture 3." 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 3. 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 3 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.

Nikon Transfer Does Not Start

If Nikon Transfer fails to start when a supported camera is connected or a memory card from a supported camera inserted in a card reader or PC card slot, check that the memory card is properly inserted in the camera, card reader, or card slot, that the interface cables are properly connected, and the camera is turned on. Note that Nikon Transfer will not start automatically when **Disable auto launch** is selected in the Auto Launch tab of the Nikon Browser or Nikon Viewer Preferences dialog. Nikon Transfer will not start when Nikon Capture 3 Camera Control is running.

Captured Images are Too Bright, Too Dark, Washed Out, or Out of Focus

- At default settings, Nikon Capture 3 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.

Thumbnails Are Not Displayed in Nikon Browser

Check that the folder selected in the folder tree contains images or sound files created by a supported model of camera.

Movies Can Not Be Played Back

Confirm that you have installed a program for playing movies back.

Unable to Locate Images after Transfer

Check the destination displayed in the Nikon Transfer window.

Appendix D

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 3, 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 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 **I**nternational **C**olor **C**onsortium, 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 **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers 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 **J**oint **P**hotographic **E**xperts **G**roup. 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 **C**rystal **D**isplay. 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 **p**er **c**enti**m**eter, a measure of resolution. The more pixels per centimeter, the higher the resolution. *See also* **ppi, Resolution.**

ppi
pixels **p**er **i**nch, 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 3, 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 3 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.**