



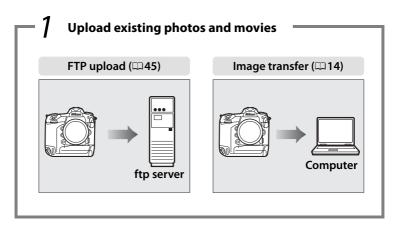
# **Network Guide**

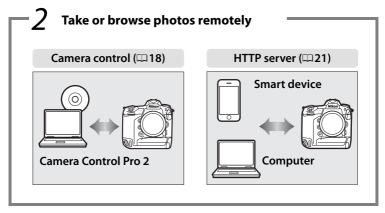
- Read this manual thoroughly before using the camera.
- After reading this manual, keep it in a readily accessible
- place for future reference.

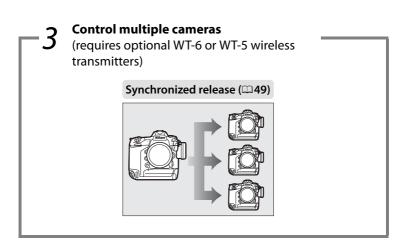


# What Networks Can Do for You

This guide describes how to connect to a network, access the camera remotely, and upload images to computers and ftp servers over Ethernet connections. Once a connection has been established, you can:







# 🖉 Тір

See page 5 for information on configuring the camera for connection to a host computer, page 39 for information on configuring the camera for connection to an ftp server.

#### **Nikon Manual Viewer 2**



Install the Nikon Manual Viewer 2 app on your smartphone or tablet to view Nikon digital camera manuals, anytime, anywhere. Nikon Manual Viewer 2 can be downloaded free of charge from the App Store and Google Play. Download of the app and any product manuals requires an Internet connection, for which fees may be levied by your phone or Internet service provider.

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#### **Background Knowledge**

This guide assumes basic knowledge of ftp servers, local area networks (LANs), and wireless networks. For more information on installing, configuring, and using the devices in a network, contact the manufacturer or network administrator. Information on configuring computers for connection to wireless networks may be found in the on-line help for the Wireless Transmitter Utility.

#### Life-Long Learning

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

- For users in the U.S.A.: *http://www.nikonusa.com/*
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• For users in Asia, Oceania, and the Middle East: 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 following URL for contact information: *http://imaging.nikon.com/* 

#### Illustrations

The appearance and content of the software and operating system dialogs, messages, and displays shown in this guide may vary with the operating system used. For information on basic computer operations, see the documentation provided with the computer or operating system.

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FTP Upload45
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# Introduction

This guide describes how to use the camera in (chiefly Ethernet) network environments, including connecting to and operating the camera in a network. Be sure to read this guide and the camera manual thoroughly and to keep them where they will be read by all those who use the product. Information on using optional WT-6 and WT-5 wireless transmitters can be found in the manuals for the devices in question.

#### Symbols and Conventions

The following symbols and conventions are used throughout this guide:



This icon marks cautions, information that should be read before use to prevent damage to the product.



This icon marks notes, information that should be read before using the device.

This icon marks references to other pages in this guide.

Save where otherwise noted, it is assumed that default camera settings are used.

# **Network Options**

The camera can be connected to Ethernet or wireless networks using the built-in Ethernet port or an optional WT-6 or WT-5 wireless transmitter (note that an Ethernet cable — available separately from commercial sources — is required for an Ethernet connection). Choose from the following connection modes:

FTP upload (□145) Image transfer (□114)	Upload existing photos and movies to a computer or ftp server, or upload new photos as they are taken.	
Camera control (¤18)	Control the camera using optional Camera Control Pro 2 software and save new photos and movies directly to the computer.	
HTTP server (CII 21)	View and take pictures remotely using a browser- equipped computer or smart device.	
Synchronized release (wireless only; 🕮 49)	Synchronize the shutter releases for multiple remote cameras with a master camera.	

# Ethernet Connection

Ethernet connections require no adjustments to wireless LAN settings.

# FTP Servers

Servers can be configured using standard ftp services available with supported operating systems, such as IIS (Internet Information Services). Internet ftp connections and connection to ftp servers running third-party software are not supported.

# HTTP Sever Mode

Internet connections are not supported in http server mode.

# **Routers**

Connection to computers on other networks via a router is not supported.

# Firewall Settings

TCP ports 21 and 32768 through 61000 are used for ftp, TCP ports 22 and 32768 through 61000 for sftp, and TCP port 15740 and UDP port 5353 for connections to computers. File transfer may be blocked if the server firewall is not configured to allow access to these ports.

# The Wireless Transmitter Utility

The Wireless Transmitter Utility is used for pairing in image transfer and camera control modes ( $\Box$  13) and can also help create network profiles. You can install the utility after downloading it from the following website:

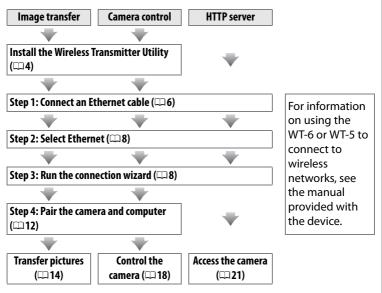
# http://downloadcenter.nikonimglib.com/

Be sure to use the latest versions of the Wireless Transmitter Utility and the camera firmware.

# Transfer, Control, and HTTP

# **Ethernet Connections**

Follow the steps below to connect to a computer in image transfer, camera control, and http server modes.



# Choosing a Power Source

To prevent the camera powering off unexpectedly during setup or data transfer, use a fully-charged battery or an optional AC adapter. For more information, see the camera manual.

# Step 1: Connecting an Ethernet Cable

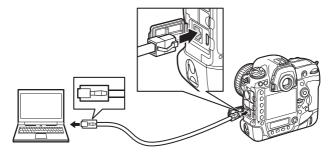
After starting the computer and logging in, ready the camera as described below. Do not turn the camera off or disconnect the Ethernet cable while data are being transferred to the computer.

## 1 Insert a memory card. Turn the camera off and insert a memory card. This step can be omitted in camera control mode (C 18).



# **2** Connect an Ethernet cable.

Connect the Ethernet cable as shown below. Do not use force or insert the connectors at an angle.



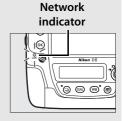
# **3** Turn the camera on. Rotate the power switch to turn the camera on.

#### Power switch



## Connection Status

Connection status is shown by the network indicator.



Network indicator	Status
•	Network functions disabled (CD 55) or Ethernet
(off)	cable not connected.
) (green)	Waiting to connect.
ېر (flashes green)	Connected.
ېن (flashes amber)	Error.

### The Viewfinder Display

Connection status is also shown in the camera viewfinder. 器 is displayed when the camera is connected via Ethernet, ( $T^{0}$  when it is connected to a wireless network, and a flashing when an error has occurred.



# Step 2: Enabling the Ethernet

Select the Ethernet as the network device used by the camera.

# 1 Select Choose hardware.

In the setup menu, select **Network**, then highlight **Choose hardware** and press (). The menu offers a choice of **Wired LAN** and **Wireless LAN**.

# **2** Select Wired LAN.

Highlight **Wired LAN** and press <sup>®</sup> to select the highlighted option and return to the network menu.



Network Choose hardware

Network connection

Network setting

Choose a profile.

0FF

몼

# Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

# **1** Display network profiles.

In the network menu, highlight **Network settings** and press **()** to display the profiles list and other network settings.

# **2** Select Create profile.

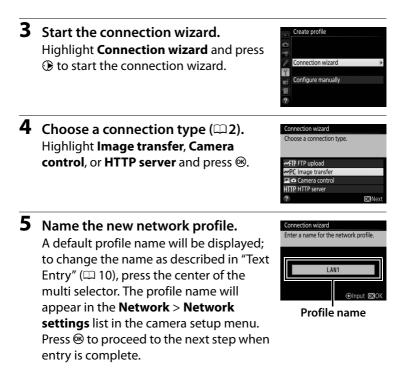
Highlight **Create profile** and press **(b)**. Note that if the list already contains nine profiles, you will need to delete an existing profile using the **(m)** button before proceeding (**(m)** 57).



Network Choose hardware

Network connection Network settings

Choose a profile



# Text Entry

The following dialog is displayed when text entry is required.



To enter a new letter at the current cursor position, tap the letters on the touch-screen keyboard (tap the keyboard selection button to cycle through the upper-case, lower-case, and symbol keyboards). You can also use the multi selector to highlight the desired character in the keyboard area and press the center of the multi selector (note that if a character is entered when the field is full, the last character in the field will be deleted). To delete the character under the cursor, press the  $\widehat{u}$  ( $\widehat{w}$ ) button. To move the cursor to a new position, tap the display or hold the  $\operatorname{Qes}$  ( $\clubsuit$ ) button and press  $\widehat{w}$  or  $\widehat{\mathcal{P}}$ .

To complete entry and return to the previous menu, press B. To exit to the previous menu without completing text entry, press **MENU**.

• **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.



• Enter manually: When prompted, enter an IP address and subnet mask by pressing € and ⊕ to highlight segments and ⊕ and ⊕ to change. Press ⊕ to proceed when entry is complete.

# **7** Choose your next step.

The IP address will be displayed; press <sup>®</sup>. Your next step depends on the connection type selected in Step 4 on page 9:



If you chose Image transfer or Camera control, pair the camera and computer as described on page 12.

Connection wizard	
Setup complete.	
Connect and exit wizard	
	_
Exit wizard	
	<b>OK</b> Nex

If you chose HTTP server, proceed to Step 8.

### Routers

Connection to computers on other networks via a router is not supported.

# **8** Exit the wizard.

Highlight one of the following options and press  $\circledast$ .

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- Exit wizard: Save the new network profile and exit.

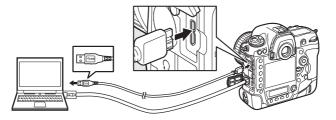
Proceed to "HTTP Server" (221).

# Step 4: Pairing

If you selected **Image transfer** or **Camera control** in Step 4 of the connection wizard (<sup>(C)</sup> 9), pair the camera with the computer as described below. Pairing allows the computer to connect to the camera.

1 Connect the camera to the computer via USB.

When prompted, connect the camera to the computer using the USB cable supplied with the camera.





Connection wizard Pairing computer and camera.

Connect the camera to the computer using the USB cable.

2	<b>Start the Wireless Transmitter Utility.</b> When prompted, start the copy of the	Connection wizard Pairing computer and camera. Connect the camera to the computer	
	Wireless Transmitter Utility installed on the computer. Pairing will begin automatically.	using the USB cable. Start the Wireless Transmitter Utility on the computer.	
3	<b>Disconnect the camera.</b> The message at right will be displayed when pairing is complete. Disconnect the USB cable.	Connection Wzard Pairing complete. Disconnect the USB cable.	
4	<ul> <li>Exit the wizard.</li> <li>Highlight one of the following options and press <sup>®</sup>.</li> <li>Connect and exit wizard: Save the new network profile and connect to the</li> </ul>	Connection wizard Setup complete. Connect and exit wizard Exit wizard	

• Exit wizard: Save the new network profile and exit.

server.

Proceed to "Image Transfer" (214) or "Camera Control" (218).

**OK**Next

# **Image Transfer**

Image transfer is used to upload photographs and movies to the computer from a camera memory card. The explanation that follows assumes that existing pictures are used.

1 Display network profiles. In the setup menu, select Network > Network settings to display the profiles list. Image transfer profiles are indicated by a ~PC icon. Highlight a profile and press ® to select the highlighted profile and return to the network menu.



Select Network connection.
 Highlight Network connection and press <sup>(b)</sup>.



# **3** Select Enable.

Highlight **Enable** and press ® to connect to the network and return to the network menu.

The profile name will be displayed in green when a connection is established.





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The image currently displayed full-frame or highlighted in thumbnail playback can be marked for upload by pressing the *i* button, highlighting Select/deselect for transfer in the *i*-button menu, and pressing ().

# **4** View pictures.

Press the 🕩 button to view pictures. Display the first picture to be sent in single-image playback or highlight it in the thumbnail list.

# **5** Upload pictures.

Press @ and the center of the multi selector. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue

when upload is complete. Additional pictures will be uploaded in the order selected.

To upload a picture that has already been uploaded once, press ® and the center of the multi selector once to remove the blue transfer icon, and then press @ and the center of the multi selector again to mark the image with a white transfer icon.

# **Uploading New Photographs as They Are Taken**

To upload new photographs as they are taken, select On for Network > Options > **Auto send** in the setup menu ( $\square 61$ ).









## Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press  $\circledast$  and the center of the multi selector. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off (transfer marking is saved, and transfer will resume when the camera is next turned on)

# Firewall Settings

TCP port 15740 and UDP port 5353 are used for host computer connections. Computer firewalls must be configured to allow access to these ports, as otherwise the computer may not be able to access the camera.

## Interval Timer Photography

Upload will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

# **Voice** Memos

Voice memos can not be uploaded separately, but will be included when the associated pictures are transmitted.

# During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

# Loss of Signal

Wireless transmission may be interrupted if the signal is lost. Transmission can be resumed by turning the camera off and then on again.

# Destination Folders

By default, images are uploaded to the following folders:

• Windows: \Users\(user name)\Pictures\Wireless Transmitter Utility

• Mac: /Users/(user name)/Pictures/Wireless Transmitter Utility The destination folder can be selected using the Wireless Transmitter Utility.

## **Transfer Status**

During playback, the status of images selected for upload is shown as follows:

# ௴ऒ: "Send"

Images that have been selected for upload are marked with a white transfer icon.

# 公习: "Sending"

A green transfer icon is displayed during upload.

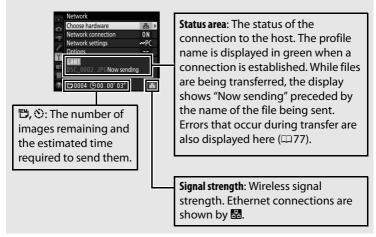


#### **必忍: "Sent**"

Images that have been uploaded successfully are marked with a blue transfer icon.

# Network Status

Network status can be viewed in the top level of the network menu.



# **Camera Control**

Select this option to control the camera from a computer running Camera Control Pro 2 (available separately) and save photographs directly to the computer hard disk instead of the camera memory card (movies will still be saved to the camera memory card; insert a memory card before shooting movies). Note that the camera standby timer will not expire when the camera is in camera control mode.

# **1** Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. Camera control profiles are indicated by a **G** icon. Highlight a profile and press **(B)** to select the highlighted profile and return to the network menu.

# 2 Select Network connection. Highlight Network connection and press ().





# **3** Select Enable.

Highlight **Enable** and press ® to connect to the network and return to the network menu.

The profile name will be displayed in green when a connection is established.



# 4 Start Camera Control Pro 2.

Start the copy of Camera Control Pro 2 (available separately) installed on the host computer. For information on using Camera Control Pro 2, see the Camera Control Pro 2 manual (pdf).

### Firewall Settings

TCP port 15740 and UDP port 5353 are used for host computer connections. Computer firewalls must be configured to allow access to these ports, as otherwise the computer may not be able to access the camera.

### Ethernet Networks

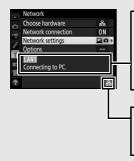
Do not disconnect the Ethernet cable while the camera is on.

### Wireless Networks

Operations may take longer on wireless networks. If the signal is disrupted while pictures are being transferred to Camera Control Pro 2, the camera network indicator or the LED on the WT-5 will flash amber; disable and re-enable the network connection ( $\Box$  55). Transfer will resume when the connection is re-established. Note that transfer can not be resumed if you turn the camera off before transfer is complete.

# Network Status

Network status can be viewed in the top level of the network menu.



**Status area**: The status of the connection to the host. The profile name is displayed in green when a connection is established. Errors are also displayed here (\$\proceed{L}77\$).

Signal strength: Wireless signal strength. Ethernet connections are shown by ■.

# **HTTP Server**

Select **HTTP server** to view the pictures on the camera memory card or take photographs from the web browser on a computer or smart device (see page 26 for system requirements). Up to five users can access the camera at one time, although only one can take photographs or edit text. Note that the standby timer will not expire automatically when the camera is in http server mode.

1 Display network profiles. In the setup menu, select Network > Network settings to display the profiles list. HTTP server profiles are indicated by a HTTP icon. Highlight a profile and press I to select the highlighted profile and return to the network menu.



2 Select Network connection. Highlight Network connection and press ().



# **3** Select Enable.

Highlight **Enable** and press ® to connect to the network and return to the network menu.

The URL used for connection to the camera is displayed when a connection is established.

# Network connection



# **4** Launch the web browser.

Launch the web browser on the computer or smart device.

# 5 Enter the camera URL.

Enter the camera URL ("http://" followed by the camera IP address, as shown in the network menu) in the browser window address field.





# Log in.

Enter your user name and password in the web browser login dialog (the user name and password are set using **Network** > **Options** > **HTTP user settings** in the network menu as described on page 62; the default user name is "nikon" while the default password is blank).

Windows Security	×		
iexplore The server is asking for your user name and password. The server reports that it is from Nikon			
Warning: Your user name and password will be sent using basic authentication on a connection that isn't secure.			
nikon			
Password  Remember my credentials			
OK Cancel			

# 7 Choose a language.

Click Language and choose the desired option.

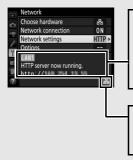
		×
Attp://	× C @ ×	
		Logout 🗠
	Shooting / Viewer	[
	▶ Viewer	
	T Edit text	
	Deutsch English Español Français 日本語 Türkçe	
		~

# 8 Choose an operating mode.

Choose **Shooting/Viewer** to take pictures ( $\Box 27, 34$ ) and **Shooting/Viewer** or **Viewer** to view existing pictures ( $\Box 29$ , 36). To use the computer or smart device web browser to edit image comments and copyright and IPTC information stored on the camera, select **Edit text** ( $\Box 31, 38$ ). Up to five users at a time can connect using **Viewer**, but only one user at a time can connect using **Shooting/Viewer** or **Edit text** (if another user is already connected using **Shooting/Viewer** or **Edit text**, these options will not be displayed and only four users will be able to connect using **Viewer**).

#### Network Status

Network status can be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The camera URL is displayed when a connection is established. Errors are also displayed here ( $\Box$ 77).

Signal strength: Wireless signal strength. Ethernet connections are shown by 
☐.

# HTTP Server System Requirements

Operation has been confirmed with the following systems:

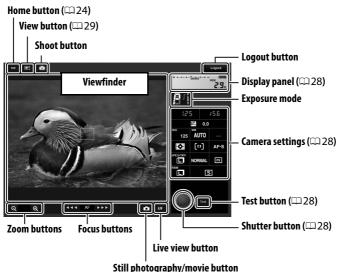
Windows	
OS	Windows 10, Windows 8.1, Windows 7
	Windows 10: Microsoft Edge
Browser	Windows 8.1: Internet Explorer 11
	Windows 7: Internet Explorer 10
	• <b>Resolution</b> : 1024 × 768 pixels (XGA) or more; 1280 × 1024
Graphics	pixels or more recommended
	Color: 24-bit color (True Color) or more
Mac	
OS	OS X version 10.10, 10.9, or 10.8
Browser	OS X version 10.10: Safari 8
	OS X version 10.9: Safari 7
	OS X version 10.8: Safari 6
Graphics	• <b>Resolution</b> : 1024 × 768 pixels (XGA) or more; 1280 × 1024
	pixels or more recommended
	Color: 24-bit color (millions of colors) or more
Android OS	
OS	Android 5.0, 4.4
Browser	Chrome
ior	
iOS	
OS	iOS 8, iOS 7
Browser	The version of Safari included with the operating system

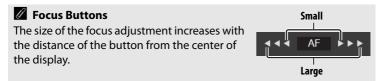
# **Computer and Android Web Browsers**

This section describes the http server displays for computer and Android web browsers (dialogs are shown with all buttons displayed for explanatory purposes). Click or tap to adjust camera settings. For information on the displays for iPhones, see page 34.

# **II** The Shooting Window

The following controls can be accessed by selecting **Shooting**/ **Viewer** on the server home page. To display the view through the camera lens in the viewfinder area, tap or click the live view button. Tap or click the button again to exit live view.





Display panel	Contains the exposure indicator and shows the battery level and number of exposures remaining.
Camera settings	Click or tap icons to adjust settings for photography or movie recording. See the camera manual for details.
Shutter button	Take a photograph or start and end movie recording. To focus, click or tap the desired subject in the viewfinder area.
Test button	Take a test photo and display it in the viewfinder without recording it to the camera memory card. Not available in movie live view.

#### Enabling Live View on the Camera

When the view through the camera lens is displayed in the viewfinder area, pressing the camera is button will display the view through the lens in the camera monitor. Press the button again to end live view on the camera.

#### The Release Mode Button

Rotating the camera release mode dial to  $\square$  enables the release mode button, which can be used to choose from single-frame, high-speed continuous, and low-speed continuous release modes. In highand low-speed continuous release modes, the camera takes photographs while the shutter-release button is pressed.



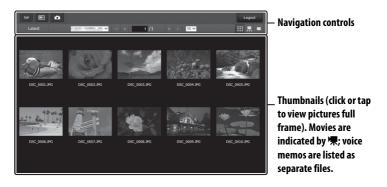
Release mode button

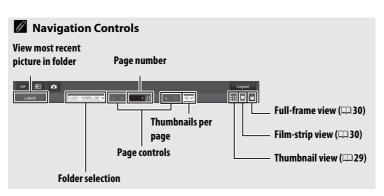
# **II** The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or by clicking or tapping the view button in the shooting window. The viewer window offers a choice of thumbnail, film-strip ( $\Box$  30), and full-frame views ( $\Box$  30).

#### **Thumbnail View**

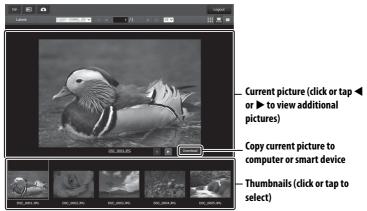
View multiple small ("thumbnail") images per page. The controls at the top of the window can be used for navigation.



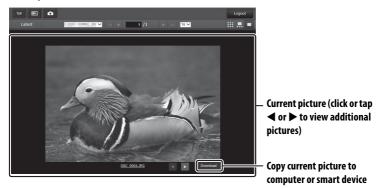


#### **Film-Strip View**

Choose the picture displayed from the thumbnails at the bottom of the window.



#### **Full-Frame View** View pictures full frame.



### **II** The Text Edit Window

The text edit window, which is used to edit image comments and copyright and IPTC information stored on the camera, can be accessed by selecting **Edit text** on the server home page.

Save button			Logout button
	Image comm	ent (🕮 32)	
TOP Save			Logout
Attach comment			
Input comment :			
Copyright information			
Attach copyright information			
Artist : Copyright :			
ІРТС			
Auto embed during Off	*		
shooting : Select IPTC preset : P- 1	•		Clear
Profile : Unused			
Caption :			^
	Copyright infor	mation (🕮 32)	
IPTC information (CC 3	3)		Clear button

#### Home button (🕮 24)

#### Saving Changes

Changes are not saved automatically. Click or tap the save button to save changes.

### The Clear Button

Clicking or tapping the clear button immediately deletes the displayed text, even if you exit without clicking the save button.

#### Image Comment

Create a comment that can be appended to subsequent images. Comments can be viewed as metadata in ViewNX-i or Capture NX-D. The following options are available:

- Attach comment: Select this option to attach the comment to all subsequent photographs.
- Input comment: Input a comment up to 36 characters long.

#### **Copyright Information**

Add copyright information to new photographs as they are taken. Copyright information can be viewed as metadata in ViewNX-i or in Capture NX-D. The following options are available:

- Attach copyright information: Select this option to attach copyright information to all subsequent photographs.
- Artist/copyright: Enter a photographer name up to 36 characters long and a copyright holder name up to 54 characters long.

# Viewing Image Comments and Copyright Information on the Camera

Image comments and copyright information can be viewed during full-frame playback on the corresponding pages of the camera photo information display.

#### Copyright Information

To prevent unauthorized use of the artist or copyright holder names, make sure that **Attach copyright information** is not selected and that the **Artist** and **Copyright** fields are blank before lending or transferring the camera to another person. Nikon does not accept liability for any damages or disputes arising from the use of the **Copyright information** option.

#### **IPTC Information**

Embed IPTC presets in photographs as they are taken. The following options are available:

- Auto embed during shooting: Selecting this tab displays a list of IPTC presets; highlight a preset and press the save button to embed the selected preset in all subsequent photographs. Select **Off** to take photos with no IPTC presets.
- **Select IPTC preset**: Selecting this tab displays a list of IPTC presets. Choose a preset to copy to the camera.

#### IPTC Information

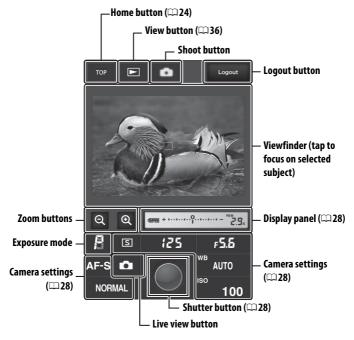
IPTC is a standard established by the International Press Telecommunications Council (IPTC) with the intent of clarifying and simplifying the information required when photographs are shared with a variety of publications. Embedded IPTC information can be viewed by selecting the IPTC page in the photo information display during full-frame playback. See the camera manual for more information.

# iPhone Web Browsers

This section describes the http server displays for iPhone web browsers (dialogs are shown with all buttons displayed for explanatory purposes). Tap to adjust camera settings. For information on computer, Android, or iPad displays, see page 27.

### **II** The Shooting Window

The following controls can be accessed by selecting **Shooting**/ **Viewer** on the server home page. Use the live view button to start live view photography () or movie live view (陳). The view through the camera lens will be displayed in the viewfinder area. To exit live view, use the live view button to turn live view off.



#### Enabling Live View on the Camera

When the view through the camera lens is displayed in the viewfinder area, pressing the camera is button will display the view through the lens in the camera monitor. Press the button again to end live view on the camera.

#### The Release Mode Button

Rotating the camera release mode dial to D enables the release mode button, which can be used to choose from single-frame, high-speed continuous, and low-speed continuous release modes. In highand low-speed continuous release modes, the camera takes photographs while the shutter-release button is pressed.



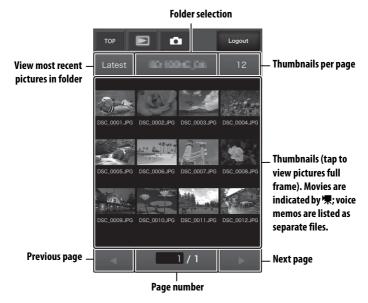
Release mode button

### **II** The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or tapping the view button in the shooting window. The viewer window for iPhone web browsers offers a choice of thumbnail and full-frame views ( $\Box$  37).

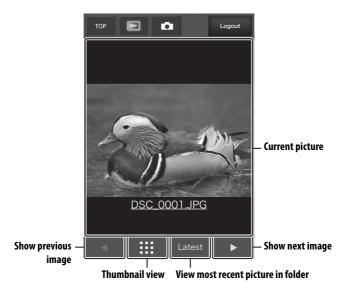
#### **Thumbnail View**

View multiple small ("thumbnail") images per page.



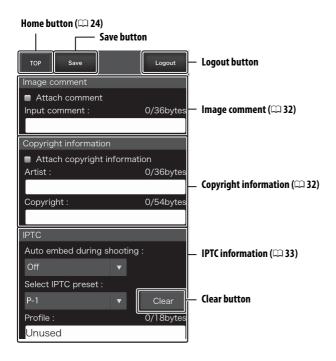
#### **Full-Frame View**

View pictures full frame.



### **II** The Text Edit Window

The text edit window, which is used to edit image comments and copyright and IPTC information stored on the camera, can be accessed by selecting **Edit text** on the server home page.



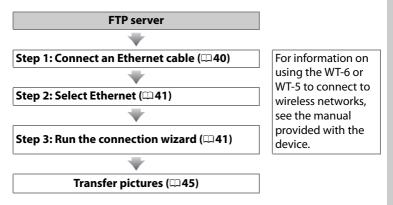
#### Saving Changes

Changes are not saved automatically. Tap the save button to save changes.



# **Ethernet Connections**

Follow the steps below to connect to an ftp server.



#### Choosing a Power Source

To prevent the camera powering off unexpectedly during setup or data transfer, use a fully-charged battery or an optional AC adapter. For more information, see the camera manual.

#### FTP Servers

This guide assumes that you are connecting to an existing ftp server. Servers can be configured using standard ftp services, such as IIS (Internet Information Services), available with supported operating systems ( $\square 67$ ). Internet ftp connections and connection to ftp servers running third-party software are not supported.

# Step 1: Connecting an Ethernet Cable

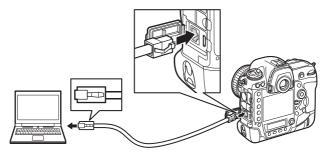
After starting the ftp server, connect the camera as described below. Do not turn the camera off or disconnect the Ethernet cable while data are being exchanged with the ftp server.

# **1** Insert a memory card. Turn the camera off and insert a memory card.



# **2** Connect an Ethernet cable.

Connect the camera to the ftp server as shown below. Do not use force or insert the connectors at an angle.



# **3** Turn the camera on. Rotate the power switch to turn the camera on.

#### Power switch



# Step 2: Enabling the Ethernet

Select the Ethernet as the network device used by the camera.

- Select Choose hardware. In the setup menu, select Network, then highlight Choose hardware and press (). The menu offers a choice of Wired LAN and Wireless LAN.
- 2 Select Wired LAN. Highlight Wired LAN and press ® to select the highlighted option and return to the network menu.

# **Step 3: The Connection Wizard**

Follow the on-screen instructions to create a network profile.

# **1** Display network profiles.

In the network menu, highlight **Network** settings and press **()** to display the profiles list and other network settings.

2 Select Create profile. Highlight Create profile and press ⊕. Note that if the list already contains nine profiles, you will need to delete an existing profile using the m () button before proceeding.



몼

oose hardware

rk setting

Y

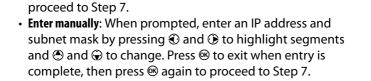


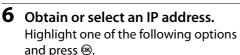


- Start the connection wizard.
  Highlight Connection wizard and press
  to start the connection wizard.
- 4 Choose a connection type. Highlight FTP upload and press ®.
- 5 Name the new network profile. A default profile name will be displayed; to change the name, press the center of the multi selector (□ 10). The profile name will appear in the Network > Network settings list in the camera setup menu. Press <sup>®</sup> to proceed to the next step when entry is complete.
- Connection Wzard Enter a name for the network profile. f LAN1 ⊕Input @30K

**OK**Nex

**OKIN**e





• Obtain automatically: Select this option if

IP address automatically. Press ® to

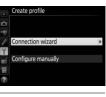
the network is configured to supply the



Connection wizard Choose how the IP address is obtained.

Obtain automatically

Enter manually



Connection wizard Choose a connection type.

←FIP FTP upload
 ←PC Image transfer
 Gamera control
 HTTP HTTP server

	Choose the server type.	Connection wizard		
	Highlight <b>FTP</b> or <b>SFTP</b> (secure ftp) and	Choose the FTP server type. "FTP" is recommended in most situations.		
	press ®.	FTP		
		SFTP OKINext		
8	Enter the IP address.			
	Press the center of the multi selector,	0 1 2 3 4 5 6 7 8 9		
	enter the server URL or IP address ( $\Box$ 10) and press $\otimes$ , and then press $\otimes$ to	A B C D E F G H I J K L M N O P Q R S T		
	connect.	UVWXYZ_ Aa&		
9	Log in.	Connection wizard		

Highlight one of the following options and press ®.

- Anonymous login: Select this option if the server does not require a user ID or password.
- Enter user ID: Enter a user ID and password when prompted and press ®.

server

nymous login

OKIN

#### Firewall Settings

Ports 21 and 32768 through 61000 are used for ftp, ports 22 and 32768 through 61000 for sftp. File transfer may be blocked if the server firewall is not configured to allow access to these ports.

# **10** Choose a destination folder.

Highlight one of the following options and press  $\circledast$ .

- **Home folder**: Select this option to upload pictures to the server's home folder.
- Enter folder name: Select this option to upload pictures to another folder (the folder must already exist on the server). Enter a folder name and path when prompted and press <sup>®</sup>.

# **11** Exit the wizard.

Highlight one of the following options and press  $\circledast$ .

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- Exit wizard: Save the new network profile and exit.

Proceed to "FTP Upload" (245).



Setup complete.	
Connect and exit wizard	
Exit wizard	

#### 45

# **FTP Upload**

Photos and movies can be uploaded from camera memory cards to an ftp server as described below, or photos can be uploaded as they are taken. For information on setting up an ftp server, see page 67.

- 1 Display network profiles. In the setup menu, select Network > Network settings to display the profiles list. FTP server profiles are indicated by a ⊷FTP icon. Highlight a profile and press to select the highlighted profile and return to the network menu.
- 2 Select Network connection. Highlight Network connection and press ().

# **3** Select Enable.

Highlight **Enable** and press ® to connect to the network and return to the network menu.

The profile name will be displayed in green when a connection is established.







Enable

Disahl



# **4** View pictures.

Press the 🖻 button to view pictures. Display the first picture to be sent full frame or highlight it in the thumbnail list.

# **5** Upload pictures.

Press i and the center of the multi selector. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue when upload is complete. Additional pictures will be uploaded in the order selected.

To upload a picture that has already been uploaded once, press ® and the center of the multi selector once to remove the blue transfer icon, and then press ® and the center of the multi selector again to mark the image with a white transfer icon. 



#### Uploading New Photographs as They Are Taken

To upload new photographs as they are taken, select **On** for **Network** > **Options** > **Auto send** in the setup menu ( $\square$  61).

A	Auto send
飘	
1	On
Y	
∎ź	Off
Ш	

#### Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press ® and the center of the multi selector. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off (transfer marking is saved, and transfer will resume when the camera is next turned on)

#### During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

### Interval Timer Photography

Upload will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

#### **Voice** Memos

Voice memos can not be uploaded separately, but will be included when the associated pictures are transmitted.

#### Loss of Signal

Wireless transmission may be interrupted if the signal is lost, but can be resumed by turning the camera off and then on again.

#### **Transfer Status**

During playback, the status of images selected for upload is shown as follows:

#### 🐼: "Send"

Images that have been selected for upload are marked with a white transfer icon.

#### 조좌: "Sending"

A green transfer icon is displayed during upload.

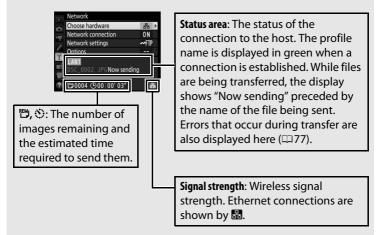
# 🐼: "Sent"

11 1004C DF D5C 0001 JPG 15/10/2015 10 02:22 C 05568x3712

Images that have been uploaded successfully are marked with a blue transfer icon.

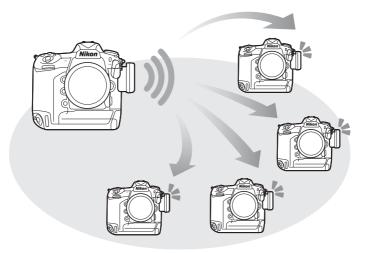
# Network Status

Network status can be viewed in the top level of the network menu.



# **Synchronized Release**

Synchronized release groups one master D5 camera with up to ten remote cameras and synchronizes the shutters on the remote D5 camera with the release on the master camera. The master and remote cameras must all be equipped with optional WT-6 or WT-5 wireless transmitters. Note that the standby timer will not expire automatically when the camera is in synchronized release mode.



#### D4S and D4 Cameras

Synchronized release can also be used with D4S or D4 cameras to which WT-5 wireless transmitter have been connected.

# Selecting Wireless LAN for Synchronized Release

Select wireless LAN for all cameras that will be used in synchronized release mode.







# **Synchronized Release Options**

The following options are available for synchronized release: **Group name, Master/remote, Remote camera check**, and **Number of remote cameras**. To view synchronized release settings, select **Network > Network settings** in the setup menu, highlight **Synchronized release**, and press **Q ■** (\$).

Network settings	Edit
Synchronized release	Synchronized release
Create profile	Group name
Copy to/from card	Group name
9	Master/remote
	Master camera
1	Remote camera check 0FF
? ORAEdit	Number of remote cameras

### Master Camera

Configure the master camera as follows:

#### **Group Name**

Enter a group name of up to 16 characters (1210). The master and remote cameras must all be in the same group.

#### Master/Remote

Select **Master camera** to designate the current camera as the master camera. Each group can have only one master; pressing the shutter-release button on the master releases the shutters on the remote cameras.

#### **Remote Camera Check**

Select **On** to check whether the remote cameras are ready. The camera network indicator (and the LED lamp on the WT-5, if applicable) will flash amber to warn if the number of cameras returning "ready" is less than that selected for **Number of remote cameras**.

#### **Number of Remote Cameras**

Enter the number (1–10) of remote cameras in the group. This option is available only if **On** is selected for **Remote camera check**.









### Remote Cameras

Configure the remote cameras as follows:

#### **Group Name**

Enter a group name of up to 16 characters ( $\Box$ 10). The master and remote cameras must all be in the same group.

#### Master/Remote

Select **Remote camera** to designate the current camera as a remote camera. The shutters on the remote cameras will be released when the shutter-release button on the camera selected as the **Master camera** is pressed.

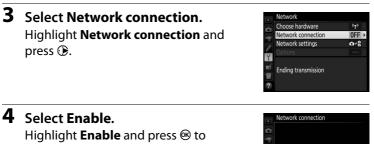
# **Taking Pictures**

1 Display network settings. In the setup menu, select Network > Network settings.



2 Select Synchronized Release. Highlight Synchronized release, press Q⊠ (\$), and adjust the settings for master and remote cameras as described on pages 51 and 52. Press <sup>®</sup> to select synchronized release and return to the network menu.



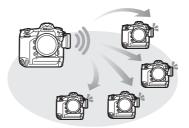


Highlight **Enable** and press B to connect to the network and return to the network menu.



# **5** Take pictures.

Pressing the shutter-release button on the master camera releases the shutters on the remote cameras.



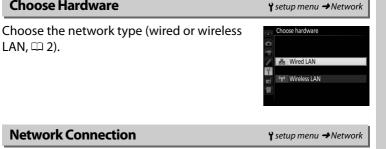
#### Remote Camera Check

If remote camera check ( $\Box$ 51) is on, warnings will be displayed if any of the remote cameras are not ready.

# **Menu Guide**

This section describes the items in the Network menu.





### **Network Connection**

**Choose Hardware** 

LAN, 🕮 2).

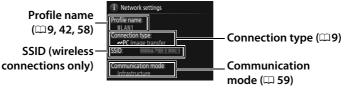
Choose **Enable** to enable the network connection. Note that this increases the drain on the battery; Disable is recommended when the network is not in use.



Highlight **Network settings** and press () to display the network profiles list, where you can create new profiles or select an existing profile.

### **II** The Profile List

The camera can store up to nine network profiles. Highlight a profile and press M to connect to the highlighted host computer or ftp server, or press m (m) to delete the highlighted profile ( $\fbox{m}$  57). To view information on the highlighted profile, press **On** (m/**?**).



To edit the highlighted profile, press 🖓 (4) (🕮 58).



# Create Profile

Choose **Connection wizard** to create network profiles with the help of a wizard ( $\square 8, 41$ ), **Configure manually** to enter ftp and http server settings manually ( $\square 75$ ).

# **II** Copy to/from Card

This option is available only with ftp and http server connections. Select **Copy profile from card** to copy profiles from the root directory of the memory card to the profile list. Selecting **Copy profile to card** displays the camera profile list; highlight a profile and press ® to copy the profile to the card (password-protected profiles can not be copied;  $\Box$  58). If there are two memory cards inserted in the camera, the card in the Slot 1 will be used for both "copy from" and "copy to" operations.

# **III** Deleting Network Profiles

Press  $\overline{\mathbb{m}}$  ( $\overline{\mathbb{R}}$ ) to delete the profile currently highlighted in the profile list. A confirmation dialog will be displayed; highlight **Yes** and press  $\overline{\mathbb{R}}$ .



# **Editing Network Profiles**

To edit the profile currently highlighted in the profile list, press  $\Im$  (4) and choose from the following options:



General	eneral Edit the profile name and password ( <sup>1158</sup> ).		
Wireless	Edit wireless settings (wireless connections only;		
	□□59).		
TCP/IP	Edit TCP/IP settings (印60).		
FTP	Edit ftp settings (🕮 60).		

#### **Editing Profiles**

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost.

#### General

Choose **Profile name** to edit the profile name, **Password protection** to enter a profile password and enable or disable password protection. Enabling password protection prevents others from viewing network settings.



#### Wireless

Edit the following wireless settings:

- **SSID**: Enter the name (SSID) of the network on which the host computer or ftp server is located.
- Communication mode: Select Infrastructure for wireless communication via a wireless network access point, Access point to use the camera as an access point to connect to the ftp server or computer instead of connecting via a wireless network access point.
- **Channel**: Select a channel (access point mode only; in infrastructure mode, the channel will be selected automatically).
- Authentication: The authentication used on the network. Choose from open system, shared key, WPA-PSK, and WPA2-PSK (infrastructure) or open system and WPA2-PSK (access point mode).
- Encryption: The encryption used on the network. The options available depend on the authentication used:

   Open: None; 64- or 128-bit WEP available when Infrastructure is selected for Communication mode
   Shared: 64- or 128-bit WEP
   WPA-PSK: TKIP; AES
   WPA2-PSK: AES
- Encryption key: If the network uses encryption, enter the network key. The number of characters required depends on the type of key used:

	WEP (64-bit)	WEP (128-bit)	TKIP, AES
Number of characters (ASCII)	5	13	8–63
Number of characters (hex)	10	26	64

• Key index: If WEP64 or WEP128 is selected for **Encryption** in infrastructure mode, choose a key index matching that used by the access point or host computer. A key index is not required when **No encryption** is selected.

#### TCP/IP

If the network is configured to supply IP addresses automatically, select Enable for Obtain automatically. Otherwise select **Disable** and enter the following information:

- Address/Mask: Enter an IP address and subnet mask.
- Gateway: If the network requires a gateway address, select Enable and enter the address supplied by the network administrator.
- Domain Name Server (DNS): If a Domain Name Server exists on the network, select **Enable** and enter the address supplied by the network administrator.

#### FTP

Edit the following ftp settings:

- Server type: Choose ftp or sftp and enter the URL or IP address (required), destination folder, and port number.
- PASV mode: Select Enable to enable PASV mode.
- Anonymous login: Select Enable for anonymous login, or select Disable to supply a User ID and Password.
- Proxy server: If a proxy server is required for ftp, select Enable and enter the address and port number for the proxy server.

TCP/IP [1/2] Obtain automatical ON





#### Options

Edit the following settings.

### Auto Send

If **On** is selected for image transfer or ftp server connections, photos will automatically be uploaded to the server as they are taken (note, however, that photos can only be taken when a memory card is inserted in the camera). Movies can not be uploaded using this option; transfer movies during playback as described on pages 14 and 45.

# Delete After Send

Select **Yes** to delete photographs from the camera memory card automatically once upload is complete (image transfer and ftp server connections only; files marked for transfer before this option is selected are unaffected). Sequential file numbering is used while this option is in effect, regardless of the item selected for Custom Setting d7 in the camera menus. Deletion may be suspended during some camera operations.

# Send File As

When transferring NEF+JPEG images to a computer or ftp server (image transfer and ftp server connections only), choose whether to upload both the NEF (RAW) and JPEG files or only the JPEG copy.



# II Overwrite If Same Name

Choose **Yes** to overwrite files with duplicate names during upload to an ftp server, **No** to add numbers to the names of newly uploaded files as necessary to prevent existing files being overwritten.

### Protect If Marked for Upload

Select **Yes** to automatically protect files marked for upload to an ftp server. Protection is removed as the files are uploaded.

# Send Marking (FTP Upload Mode Only)

Select **On** to add a timestamp to the pictures on the camera memory card giving the time of upload. The timestamp can be viewed using ViewNX-i or Capture NX-D. For more information, see online help for the software in question or the Capture NX-D manual.

# Send Folder

Select a folder for upload (image transfer and ftp server connections only). All photos in the selected folder (including those already marked as "sent") will be uploaded, beginning immediately. Movies can not be uploaded using this option; transfer movies during playback as described on pages 14 and 45.

# Deselect All?

Select **Yes** to remove transfer marking from all images selected for upload to a computer or ftp server (image transfer and ftp server connections only). Upload of images with a "sending" icon will immediately be terminated.

# HTTP User Settings

Enter a user name and password for connection to an http server (http server connections only).

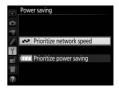


# MAC Address

Display the MAC address of the hardware selected for **Choose** hardware ( $\Box$  55). This option is available only when **Enable** is selected for **Network connection**.

### Power Saving

Choose **Prioritize network speed** for faster network speeds, **Prioritize power saving** for reduced power consumption. **Prioritize network speed** ensures that LAN connections remain active even when data are not being



exchanged with the server and allows Ethernet connections using the high-speed 1000BASE-T standard. **Prioritize power saving** limits Ethernet connections to 100BASE-TX and ensures that LAN connections are terminated automatically when data transfer ends. The camera network indicator will turn off ( $\Box$ 7).

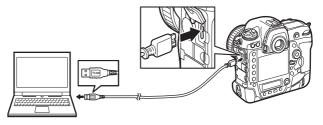
# Appendices

# Creating Profiles on a Computer

The Wireless Transmitter Utility (□ 4) can be used to create network profiles.

### **1** Connect the camera.

Start the computer and connect the camera using the supplied USB cable as shown below.



2 Turn the camera on. Rotate the power switch to turn the camera on.

#### Power switch



### **3** Start the Wireless Transmitter Utility.

Double-click the Wireless Transmitter Utility icon on the desktop (Windows) or click the Wireless Transmitter Utility icon in the Dock (Mac).

### **4** Create a profile.

Follow the on-screen instructions to create a network profile.

## **Creating an FTP Server**

Images can be uploaded to ftp servers created using the standard ftp services included with Windows 10 (Enterprise/Pro/Home), Windows 8.1, Windows 8.1 (Enterprise/Pro), and Windows 7 (Professional/Enterprise/Ultimate). Under Windows, Internet Information Services (IIS) are required to configure ftp servers (installation instructions are available from Microsoft). Be sure to use only characters that appear in the keyboard area of the camera text-entry dialog ( $\Box$  10) for such settings as user ID, password, and folder names.

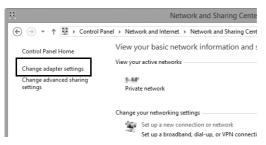
The following settings are used below for illustrative purposes:



IP address: 192.168.1.3 Subnet mask: 255.255.255.0 ftp server port: 21

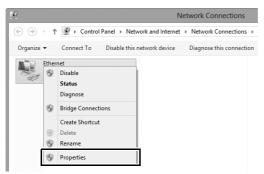
#### 1 Go to Network and Sharing Center. Select Network and Internet > Network and Sharing Center in the Control Panel.

### 2 Display the network adapter list. Click Change adapter settings.

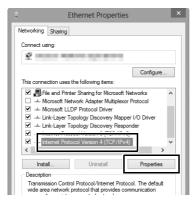


**3** Open the network properties dialog.

If you are connecting via Ethernet, right-click **Ethernet** (Windows 8.1) or **Local Area Connection** (Windows 7) and select **Properties**. If you are connecting via a wireless LAN adapter, right-click **Wi-Fi** (Windows 8.1) or **Wireless Network Connection** (Windows 7) and select **Properties**.



### 4 Display TCP/IP settings. Select Internet Protocol Version 4 (TCP/IPv4) and click Properties.



## 5 Enter an IP address and subnet mask. Enter an IP address and subnet mask for the ftp server and click **OK**.

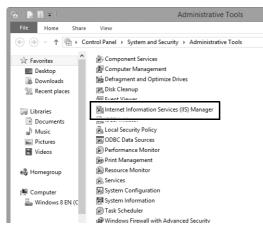
Internet Protocol Version 4 (TC	P/IPv4) Properties ? ×	
General		
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.		
<ul> <li>Obtain an IP address automatical</li> <li>Use the following IP address:</li> </ul>	lv	
IP address:	192.168.1.3	
Subnet mask:	255.255.255.0	
Default gateway:		
Obtain DNS server address auton	natically	
Use the following DNS server add	resses:	
Preferred DNS server:		
Alternate DNS server:		
Validate settings upon exit	Advanced	
	OK Cancel	

### 6 Close the network properties dialog. Click Close.



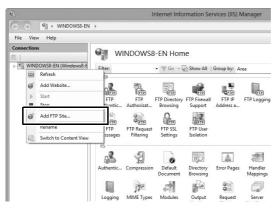
7 Open Administrative Tools. Select System and Security > Administrative Tools in the Control Panel.

### 8 Open the IIS manager. Double-click Internet Information Services (IIS) Manager.



### 9 Select Add FTP Site....

Right-click the computer user name and select **Add FTP Site...**.



### **10** Enter site information.

Name the site and choose the path to the folder that will be used for ftp upload. Click **Next** to proceed.

	Add FTP Site	?	×
Site Information			
FTD site same			
Content Directory Directory C:\Users\user\FTP			
	Previous	Finish Cance	21

#### Anonymous Login

To allow anonymous login, select a folder in the user's public folder as the content directory.

## $11 \ {\rm Choose\ binding\ and\ SSL\ options.}$

Select the IP address entered in Step 5, note the port number, select **Start FTP site automatically**, and check **No SSL**. Click **Next** to proceed.

Add FTP Site	? ×
Binding and SSL Settings	
Binding ID Address	
192.168.1.3 v 21	
Enable Virtual Host Names:     Virtual Host (example: ftp.contoso.com):	
✓ Start FTP site automatically	
No SSL     Allow SSL	
O Require SSL	
SSL Certificate:	
Not Selected Se	elect View
Previous Next	Finish Cancel

## **12** Choose authentication options.

Adjust settings as described below and click **Finish**.

- Authentication: Basic
- Allow access to: All users
- Permissions: Read/Write

Add FTP Site	?	×
Authentication and Authorization Information		
Authentication Anonymous Basic Authorization Allow access to: All users Permissions Read Write		
Previous Next Finish	Cancel	

# Manual Profile Creation

Follow the steps below to manually configure the camera for connection to ftp and http servers. Note that changes to the current profile will be lost if the camera is turned off during setup; to prevent unexpected loss of power, use a fully-charged battery or an optional AC adapter. If you are connecting to an ftp server behind a firewall, you may also need to adjust firewall settings to create exceptions for the ftp ports used by the camera (ports 21, 22, and 32768 through 61000).

- 1 **Display network profiles.** Select Network in the setup menu, then highlight Network settings and press ③ to display the profiles list and other network settings.
- **2** Select Create profile. Highlight **Create profile** and press **()**. Note that if the list already contains nine profiles, you will need to delete an existing profile using the fig (reme) button before proceeding ( $\Box$  57).
- **3** Select Configure manually. Highlight Configure manually and press ۵.





twork settings Create profile

Copy to/from card

Connection wizard Configure manually



Select a connection type.	Configure manually	
Highlight FTP upload or HTTP server	Connection type	
and press 🕃.	-FTP FTP upload	
	HTTP HTTP server	

### **5** Adjust settings.

**4** Select a connection type.

Adjust settings as described in "Editing Network Profiles" (D58).



#### **Editing Profiles**

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost. Choose a longer monitor off delay for Custom Setting c4 in the camera menus.

## Troubleshooting

Problem	Solution	Page
	Check settings for the host and/ or wireless LAN adapter and adjust camera settings appropriately.	8, 41, 58
The camera displays a TCP/	Check firewall settings.	16, 19, 43
IP or ftp error.	Confirm that you can write to the destination folder on the ftp server.	74
	Change the current PASV mode setting.	60
"Connecting to PC" does not clear from the camera display.	Check firewall settings.	16, 19, 43
The camera displays the message, "Ethernet cable is not connected".	Connect an Ethernet cable or select Wireless LAN for Choose hardware.	6, 40
The camera displays a memory card error.	Confirm that the card is properly inserted.	6, 40
Transfer is interrupted before all photographs are sent.	Transfer will resume if the camera is turned off and then on again.	16, 47
No connection is established when the camera URL is entered in a web browser (http server connections only).	Confirm that the browser is not using a proxy connection.	_

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ශ: "Sending"	17, 48
📾: "Sent"	17, 48
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