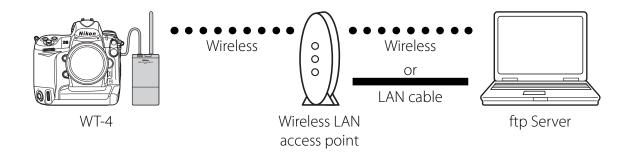
Windows XP

Nikon

Configuring the WT-4 for ftp (Infrastructure Mode)

This document provides basic instructions on configuring the WT-4 wireless transmitter and a Windows XP Professional SP2 ftp server for transmission over an infrastructure network that includes a wireless LAN access point, or bridge.



Introduction

This section describes a simple network consisting solely of a wireless LAN access point (bridge) connected to an ftp server via a LAN cable or wireless, with no connections to other networks or devices. Follow the steps below to use the WT-4 in this type of network.

1: Get Ready	pg. 2
2: Assign the ftp Server an IP Address	pg. 3
3: Create an ftp Server	pg. 5
4: Configure the Wireless LAN Access Point	pg. 7
5: Configure the ftp Server for Wireless Access	pg. 8
6: Copy the Network Profile to the Camera	pg. 12
7: Connect to the ftp Server	pg. 17

1: Get Ready

Equipment

Ready the following:

- A WT-4 wireless transmitter
- A fully-charged EN-EL3e battery for the WT-4
- A Nikon D3 or D300 digital SLR camera
- A fully-charged battery for the camera (an EN-EL4a for the D3, a EN-EL3e for the D300)
- A computer with Windows XP Professional SP2, the WT-4 Setup Utility, and Internet Information Services (IIS) * installed
- Windows operating system CD
- A wireless LAN access point
- A LAN cable
- A memory card
- A USB cable
- Manuals for the above equipment

Network Settings

Note the IP addresses, encryption, and other settings that will be used in the wireless LAN. The following are intended as examples only.

- IP address for the WT-4: 192.168.1.4
- IP address for the ftp server: 192.168.1.3
- IP address of the wireless LAN access point: 192.168.1.2
- Subnet mask: 255.255.255.0
- FTP server port: 21
- Network name (SSID): WT-4
- Communication mode: Infrastructure
- Authentication: WPA-PSK
- Encryption: TKIP
- Encryption key: abcde123

*Internet Information Services (IIS)

The Internet Information Services (IIS) supplied with Windows XP Professional can be used to create an ftp server. IIS can be installed from the Windows operating system CD; for more information, see "Installing IIS" (available under separate cover).

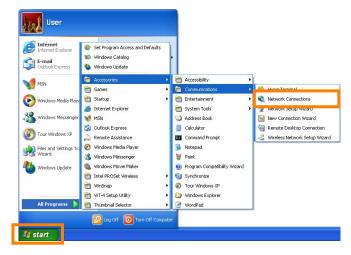
2: Assign the ftp Server an IP Address

Choose an address for the ftp server. The following IP address is intended as an example only.

- IP address: 192.168.1.3
- Subnet mask: 255.255.255.0
- TCP port: 21

2 - 1

ClickStartandselectAllPrograms>Accessories > Communications > Network Connections.



2-2

Right-click the network icon (**Wireless Network Connection** if the access point and ftp server are connected via a wireless network, **Local Area Connection** if the access point is connected by a LAN cable) and select Properties from the menu that appears.

			l Area Connection nected, Firewalled Disable
	View Available Wireless Networks		Status
	Status		Repair
	Repair		Bridge Connections
	Bridge Connections		Create Shortcut
	Create Shortcut		Delete
	Delete		Rename
	Rename	4 fi	Properties
	Properties	_ <u> </u>	
14/:40		ا م م م	

Wireless network connection

Local area connection

Select Internet Protocol (TCP/IP) and click Properties.

🕹 Local Area Connection Properties 🛛 🔹 🔀
General Authentication Advanced
Connect using:
Configure
This connection uses the following items:
QoS Packet Scheduler
AEGIS Protocol (IEEE 002.1w)+ 3.1.0.1
Install Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication
across diverse interconnected networks.
Show icon in notification area when connected Notify me when this connection has limited or no connectivity
 Holly the when this connection has innect or no connectivity
OK Cancel

2 - 4

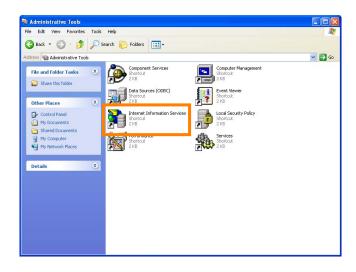
Select **Use the following IP address** and enter the IP address and subnet mask for the ftp server. Click **OK** to exit and then click **OK** to close the properties dialog. This completes the process of assigning an IP address to the ftp server.

Internet Protocol (TCP/IP) Prope	rties 🛛 💽 🔀
General	
You can get IP settings assigned autor this capability. Otherwise, you need to a the appropriate IP settings.	ask your network administrator for
Output the following IP address:	
IP address:	192.168.1.3
Subnet mask:	255.255.255.0
Default gateway:	
Obtain DNS server address autom	atically
• Use the following DNS server add	resses:
Preferred DNS server:	
Alternate DNS server:	· · ·
	Advanced
	OK Cancel

3: Create an ftp Server

3 - 1

Go to the **Performance and Maintenance** > **Administrative Tools** control panel and open the **Internet Information Services** console.



3-2

Right-click **Default FTP Site** and select **Properties** from the menu that appears.

💐 Internet Informati	on Services		
File Action View H	elp		
← → 🗈 🖬 😭	1 🗟 😫 💂	▶ ■ 1	
Internet Information So 			Path There are no items to show i
FTP Sites	Explor >		
Ť	Open Browse		
	Start Stop		
	Pause		
	New 🕨 🕨 All Tasks 🕨		
	View 🕨		
	Rename Refresh Export List	_	
	Properties		
<	Help	-	
Opens property sheet for t	he current selection.		

3 - 3

Select the IP address entered in 2 - 4 (pg. 4) and enter a **TCP Port** number. The port number is normally 21.

Def	ault FTP Site P	roperties	? 🔀
FI	TP Site Security A	Accounts Messages Home Directory	
	- Identification		
	Description:	Default FTP Site	
	IP Address:	192.168.1.3	
	TCP Port:	21	
	Connection		
	O Unlimited		
	💽 Limited To:	10 connections	
	Connection Time	eout: 900 seconds	

Open the **Security Accounts** tab and select **Allow anonymous connections**.

Default FTP Site Properties	? 🔀
FTP Site Security Accounts Hessages Home Directory	
Allow Anonymous Connections	
Select the Windows User Account to use for anonymous access to this reso	urce
Username: Browse	
Password:	
Allow only anonymous connections	
Allow IIS to control password	
FTP Site Operators	
Grant operator privileges to Windows User Accounts for this FTP site only.	
Operators: 🕼 Administrators 🛛 🖉 Add	
Remove	5 1
OK Cancel Apply	Help

3 - 5

Open the **Home Directory** tab and select **A directory located on this computer**. The root directory for images uploaded to the ftp server is listed in the **Local path** text box; choose a folder and select **Read**, **Write**, and **Log visits** (the default directory is the \inetpub\ftproot folder on the drive to which Windows is installed). Click **OK** to close the properties dialog. This completes the process of creating an ftp server.

Default FTP Site P	roperties	? 🗙
FTP Site Security A	ccounts Message Home Directory	
When connecting to	o this resource, the content should come from:	
	 a directory located on this computer 	
STROL DI	O a share located on another computer	
FTP Site Directory	f:\inetpub\ftproot Browse	
Locar an.		
	✓ Read ✓ Write	
	V white	
Directory Listing S	tyle	
O UNIX ⊗		
⊙ MS-DOS ®		
	OK Cancel Apply Hel	p

4: Configure the Wireless LAN Access Point

Configure the wireless LAN access point as described below. For more information, see the documentation provided by the manufacturer.

- Network name (SSID): Enter the network identifier (network name or SSID), which may be up to 36 characters long. The network in this example uses the identifier WT-4.
- Wireless mode: Choose 801.11g or 801.11b.
- Channel: Automatic.
- Wireless security
 - Authentication: Choose from open system, shared key, WPA-PSK, or WPA2-PSK. The network in this example uses WPA-PSK.
 - Encryption: If you selected open system or shared key authentication, choose 64- or 128-bit WEP. If you selected WPA-PSK or WPA2-PSK authentication, choose TKIP or AES. The network in this example uses TKIP.
 - Encryption key: If you selected 64-bit WEP encryption, enter a 5-character ASCII or 10-digit hexadecimal key. If you selected 128-bit WEP encryption, enter a 13-character ASCII or 26-digit hexadecimal key. If you selected TKIP or AES, enter an ASCII key of from 8 to 63 characters or a 64-digit hexadecimal key. The network in this example uses **abcde123**.
 - **ANY connection**: Enable this option to make the network SSID public. This makes it easier to connect to the network, but also makes the network less secure. This option may not be available on some access points. In this example, we will enable ANY connection.
- **IP address**: Turn any "obtain automatically" options off and enter the IP address manually. Be sure that the address is different from the addresses used for the ftp server and WT-4. The addresses for the access point, ftp server, and WT-4 must however belong to the same class. In this example, we will use the following address for the access point, while the ftp server and WT-4 are assigned 192.168.1.3 and 192.168.1.4, respectively:
- IP address: 192.168.1.2
- Subnet mask: 255.255.255.0
- Default gateway: ---.--
- DNS server: ---.--
- MAC address: If the network uses MAC address filtering, the filter must be supplied with the MAC address of the WT-4. After attaching the WT-4 to the camera, turn the WT-4 on, select **Wireless transmitter** > **Device info** > **MAC address** from the camera setup menu, and note the MAC address.

5: Configure the ftp Server for Wireless Access

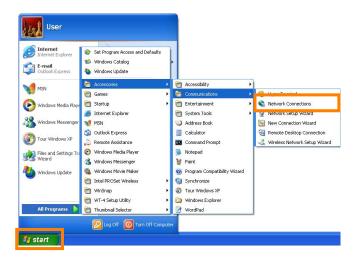
This step is only required if the ftp server connects to the access point via a wireless LAN.

If the ftp server is connected to the wireless access point via a LAN cable, proceed to 6 (pg. 12). The settings you choose in 5 should conform to the network settings selected in 4 (pg. 7).

- Network name (SSID): WT-4
- Security type: WPA-PSK
- Encryption type: TKIP
- Security key/Passphrase: abcde123

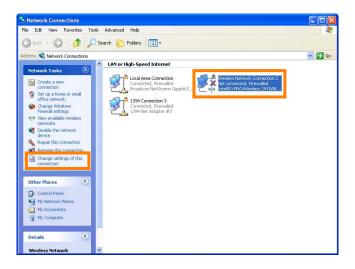
5 - 1

Click Start and select All Programs > Accessories > Communications > Network Connections.



<u>5 - 2</u>

Select Wireless Network Connection and click Change settings of this connection.



Click the Wireless Networks tab.

If a third-party wireless connection program is installed, the **Wireless Networks** tab will not be displayed. Choose authentication, encryption, and a security key as described in the documentation for the wireless LAN adapter. The Wireless Networks tab may also not be displayed if Wireless Network Connection is disabled, or if **Wireless Zero Configuration** is active in the **Performance and Maintenance** > **Administrative Tools** > **Services** Control Panel.

– Wireless Network Connection 2 Properties 👘 🛛 🔀
General Wireless Networks Advanced
Connect using:
Configure
This connection uses the following items:
 ✓ Elient for Microsoft Networks ✓ Entel Wireless Connection Agent ✓ File and Printer Sharing for Microsoft Networks ✓ GoS Packet Scheduler
Install Uninstall Properties
Description Allows your computer to access resources on a Microsoft network.
 Show icon in notification area when connected Notify me when this connection has limited or no connectivity
OK Cancel

5 - 4

Select Use Windows to configure my wireless network settings.

🕹 Wireless Network Connection 2 Properties 💦 🛛 🔁
General Wireless Networks Advanced
Use Windows to configure my wireless network settings
Available networks: To connect to, disconnect from, or find out more information about wireless networks in range, click the button below.
View Wireless Networks
Preferred networks: Automatically connect to available networks in the order listed below: Move up Move down
Add Remove Properties Learn about setting up wireless network configuration. Advanced
OK Cancel

0K

Cancel

?

5 - 5

Click Add.

5 - 6

After entering a network name and choosing security options to match those selected for the wireless LAN access point, remove the check from This is a computer-to-computer (ad hoc) network; wireless access points are not used and click **OK**.

- Network name: Enter a name of up to 32 characters. The network in this example uses the identifier WT-4.
- Security type: Choose from Open, Shared, and WPA-PSK. The WT-4 does not support WPA.
- Encryption type: The type of encryption available depends on the options selected for Network Authentication:
- Open, Shared: WEP, Disabled
- WPA, WPA2: TKIP, AES

Wireless Network Connection 2 Properties General Wireless Networks Advanced Use Windows to configure my wireless network settings Available networks: To connect to, disconnect from, or find out more information about wireless networks in range, click the button below. View Wireless Networks Preferred networks: Automatically connect to available networks in the order listed below: Move up Move down Add. Remove Properties Learn about setting up wireless network Advanced configuration.

w	'ireless ne	twork proper	ties		? 🛛	3
[Association	Authentication	Conn	ection		
	Network na	ime (SSID):	WT-4			
	Wireless	network key —				
	This netw	vork requires a ke	ey for th	ne following:		
	Network	Authentication:		WPA-PSK	~	
	Data end	cryption:		TKIP	~	
	Network	key:	••••	••••		
	Confirm n	etwork key:	••••	••••		
ľ	Key index	(advanced):	1			
	🗌 The k	ey is provided for	r me au	itomatically		
) computer-to-cor points are not us		(ad hoc) network; wirek	388	
				ОК	Cancel]

• Security key/Passphrase: If WEP is selected for Data encryption, enter a 5- or 13-character ASCII key or 10- or 26-digit hexadecimal key. Entering a five-character ASCII or ten-digit hexadecimal key enables 64-bit encryption, a 13-character ASCII or 26-digit hexadecimal key 128-bit encryption. ASCII keys may contain letters, punctuation, and the numbers 0–9, hexadecimal keys the numbers 0–9 and the letters a, b, c, d, e, and f. If TKIP or AES is selected for Data encryption, enter an ASCII key of 8 to 63 characters or a 64-digit hexadecimal key.

Click **OK**. Network setup is now complete.

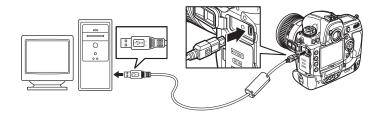
General Wireless Networks Advanced Use Windows to configure my wireless network settings Available networks: To connect to, disconnect from, or find out more information about wireless networks in range, click the button below. View Wireless Networks
Available networks: To connect to, disconnect from, or find out more information about wireless networks in range, click the button below.
To connect to, disconnect from, or find out more information about wireless networks in range, click the button below.
about wireless networks in range, click the button below.
Micro Microson Maturation
VIEW WIEless Networks
Preferred networks: Automatically connect to available networks in the order listed below:
Move up
Move down
Add Remove Properties
Learn about <u>setting up wireless network</u> <u>configuration</u> .
OK Cancel

6: Copy the Network Profile to the Camera

Use the WT-4 setup utility to copy the network profile to the camera. Before proceeding, make sure that **MTP/PTP** is selected for the **USB** option in the camera setup menu.

6 - 1

After starting the computer, use the supplied USB cable to connect the camera and turn the camera on.



6-2

Double-click the **WT-4 Setup Utility** icon on the desktop.

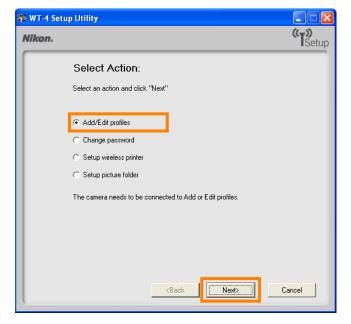


6 - 3

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



Select Add/Edit profiles and click Next.



6 - 5

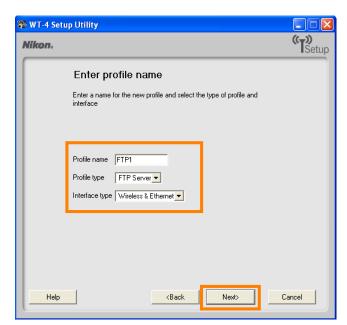
Select Add new profile and click Next.



6-6

Enter the following information and click **Next**:

- **Profile name**: Enter a name of up to 16 characters (in this example, **FTP1**).
- Profile type: Choose FTP Server.
- Interface type: Choose Wireless & Ethernet for networks that include wireless, or Ethernet only for Ethernet-only networks.



Select Manual setup and click Next.

🍄 WT-4 Setup Utility	
Nikon.	(T) Setup
Select setup method	
Select whether to use manual or automatic setup to configure the IP and Wireless settings.	
C Automatic setup (recommended)	
Select network adaptor	
Intel(R) PROAv 💌	
<back next=""></back>	Cancel

6 - 8

Enter the following information and click **Next**.

- Network name (SSID): WT-4
- Communication mode: Infrastructure
- Authentication: WPA-PSK
- Encryption: TKIP
- Encryption key: abcde123

🏵 WT-4 Set Nikon.	up Utility			تاريخ کې
	Wireless setti	ngs		
	Network name (SSID) Communication mode Channel Authentication Encryption Encryption key Key index	WT-4 Infrastructure WPA-PSK TKIP abcde123	(8 characters)	
Help		<back< th=""><th>Next></th><th>Cancel</th></back<>	Next>	Cancel

- Enter the following information and click **Next**.
- IP address: 192.168.1.4
- Subnet mask: 255.255.255.0
- **Default gateway**: Remove the check from this option.
- **DNS Server**: Remove the check from this option.

WT-4 Setu Nikon.	ip Utility	•
	TCP/IP settings	
	Obtain IP address automatically IP address 132.168.1.4 Subnet mask 255.255.255.0 Default gateway	
	<back next=""> Cancel</back>	

Choosing an IP Address

Be sure that the address for the WT-4 is different from the addresses used for the ftp server and access point. The addresses for the access point, ftp server, and WT-4 must however belong to the same class. In this example, we will use 192.168.1.2 for the access point, 192.168.1.3 for the ftp server, and 192.168.1.4 for the WT-4.

6 - 10

Enter ftp settings and click Next.

- **FTP server**: Enter IP address you selected in 2 4 (pg. 4; in this example, 192.168.1.3).
- **FTP server port**: Enter FTP server port you selected in 3 3 (pg. 5; in this example, 21).
- **FTP path**: Leave this field blank to upload pictures to the folder specified in 3 5 (pg. 6).
- Anonymous login: Select this option for anonymous login, or leave this option unchecked to supply a User ID and Password.
- **User ID**: If you will not be using anonymous log-in, enter a User name for the ftp server.
- **Password**: If you will not be using anonymous log-in, enter the administrator password.
- Use proxy server: Remove the check from this option.
- **PASV mode**: Remove the check from this option.

Þ	WT-4 Setu	ıp Utility			
٨	likon.				(T) Setup
ſ		FTP settings			
		FTP server	192.168.1.3		
		FTP server port	21		
		FTP path			
L		🔽 Anonymous login			
L		User ID			
L		Password			
L		🔲 Use proxy server			
L		Proxy server			
L		Proxy server port			
		PASV mode			
l			<back< th=""><th>ext≻</th><th>Cancel</th></back<>	ext≻	Cancel

Confirm that settings are correct and click **Next**.

Field Value Profile information Field Value Profile name FTP1 Profile type FTP Server Interface type Wireless & Ethernet Wireless settings Wireless settings Network name (SSID) WT-4 Communication mode Infrastructure Channel 1 Authentication WPA-PSK	WT-4 Setup Utility			(-))
Field Value Profile name FTP1 Profile type FTP Server Interface type Wireless & Ethernet Wireless settings Wireless nettings Network name (SSID) WT-4 Communication mode Infrastructure Channel 1	ikon.			Setu
Profile name FTP1 Profile type FTP Server Interface type Wireless & Ethernet Wireless settings Network name (SSID) WT-4 Communication mode Infrastructure Channel	Profile inform	nation		
Profile type FTP Server Interface type Wireless & Ethernet Wireless settings Network name (SSID) WT-4 Communication mode Infrastructure Channel	Field	Value		
Interface type Wireless & Ethernet Wireless settings Network name (SSID) WT-4 Communication mode Infrastructure Channel 1	Profile name	FTP1		
Wireless settings Network name (SSID) WT-4 Communication mode Infrastructure Channel	Profile type	FTP Server		
Network name (SSID) WT-4 Communication mode Infrastructure Channel 1	Interface type	Wireless & Ethernet		
Communication mode Infrastructure Channel 1	Notwork page (SSI)			
Channel 1			-	
Authentication WPA-PSK			-	
	Authentication	WPA-PSK	- -	
		<back next=""></back>		Cancel

6 - 12

Select Finish wizard and click Next.

😵 WT-4 Setu	ıp Utility	
Nikon.		(T) Setup
	Action completed successfully	
	The Profile has been saved	
	Finish wizard	
	C Select another action to perform	
	<back ca<="" td=""><td>incel</td></back>	incel

6 - 13

Turn the camera off and disconnect the USB cable. The network profile has now been copied to the camera.

7: Connect to the ftp Server

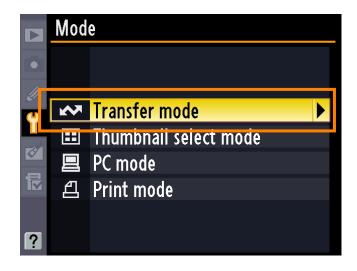
In this step, you will establish a wireless connection between the WT-4 and the ftp server. Before connecting the WT-4, select **MTP/PTP** for the **USB** option in the camera setup menu and confirm that the host computer is running and the user is logged in.

7 - 1

Insert a memory card in the camera, connect the WT-4, and turn the camera on.

7-2

Select **Transfer mode** for the **Wireless transmitter** > **Mode** option in the camera setup menu.



7 - 3

A list of available connection profiles will be displayed. Highlight the desired profile and press \circledast .

	Choose profile	\mathbf{N}
	YY器FTP1	<u>OK</u>
IJ	FIP registration	
Y		
\$		
₽		
?	🖾 Edit 🕼 Delete	

Return to the wireless transmitter menu and turn the WT-4 on. The profile name will be highlighted in green when a connection is established.

This completes the process of connecting to the ftp server.

	Wireless transmitter	
	Mode	
	Transfer settings	
	Device info	
	Device settings	
Ø 12	FTP1	
?	№ 0000 ⊕ 00:00′00"	Z 📶

Third-Party Security Software

Third-party security software with firewall support may block the ftp server port, preventing access to the ftp server. This can be avoided by setting the software to allow protocols send and receive access to TCP ports 20 and 21. For more information, see the documentation for the software or firewall.

Security Options in Windows XP Professional

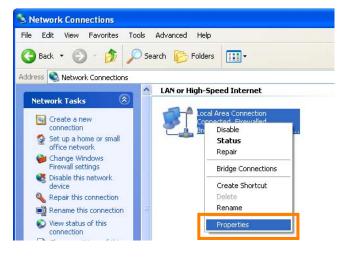
If the connection between the ftp server and the WT-4 does not function as expected in Windows XP Professional even when both devices are configured correctly, follow the steps below to check that TCP/IP filtering does not apply to TCP ports 20 and 21.

1

Click the Windows Start button and select Control Panel > Network and Internet Connections > Network Connections.

2

Right-click **Local Area Connection** and select **Properties** from the menu that appears.



3

Select **Internet Protocol (TCP/IP)** and click the **Properties** button.

🕹 Local Area Connection Properties 🛛 🛛 💽 🔀			
General Authentication Advanced			
Connect using:			
Broadcom NetXtreme Gigabit Etherne Configure			
This connection uses the following items:			
QoS Packet Scheduler AEGIS Protocol (IEEE 902.1v) v3.1.0.1 Tinternet Protocol (ICEP/IP)			
Install Uninstall Properties			
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.			
 Show icon in notification area when connected Notify me when this connection has limited or no connectivity 			
OK Cancel			

4

Click Advanced.

nternet Protocol (TCP/IP) Prope	ernes [🕜 🔼
General Alternate Configuration	
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	
💿 Obtain an IP address automatica	lly
\frown Use the following IP address: $-$	
IP address:	· · · · · · · ·
Subnet mask:	· · · · ·
Default gateway:	· · ·
 Obtain DNS server address auto 	matically
OUse the following DNS server ad	dresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced
	OK Cancel

5

In the **Options** tab, select **TCP/IP Filtering** and click **Properties**.

Advanced TCP/IP Settings	K
IP Settings DNS WINS Options Optional settings: TCP/IP filtering	
Properties Description: TCP/IP filtering allows you to control the type of TCP/IP network traffic that reaches your Windows computer.	

6

If the Enable TCP/IP Filtering (All adaptors) box is not checked, or if Enable TCP/IP Filtering (All adaptors) is checked but Permit All is selected for TCP ports, click OK to close the properties dialog. If Permit Only is selected for TCP ports, click Add and add the TCP ports 20 and 21, and then click OK to close the properties dialog. This completes the settings needed to remove filtering from TCP ports 20 and 21.

