Chapter 1 Shooting Tethered(ly) via Wi-Fi and FTP

I've taken on a contract position as a headshot photographer for a company that specializes in branding for real estate agents (one of the few remaining fields which understand the value of traditional portrait photography). A day of shooting with them will be filled with periods of shooting and then periods of image selection and retouching and form filling-outing. My goal was to be able pick up the camera, start taking pictures, and then having the pictures instantly show up on the laptop without any futzing with memory cards.

Easy, right? Lots of tethered shooting options already exist, right? Regretfully, none of the usual methods would work for me.

What was the problem? Well, when shooting tethered using a USB cable, the camera communicates with a desktop app that times out after 5 minutes of inactivity. I didn't want to have to re-establish the connection every time I picked up the camera. And shooting with Wi-Fi is great for when you're sending your images to an FTP server somewhere around the world, but it's not at all obvious how to send it to a laptop on an internal local network. What's the address of the FTP server in that case?

So I set out to figure out how to send pictures automatically from my phone to my laptop using my phone as a wi-fi hotspot. (That way I don't have to connect the camera and the laptop to a new SSID every time I go to a new location.)

Step one: Download Filezilla FTP Server (it's free!) and install it. A Windows and Mac versions are available:

Mac version:

https://filezilla-project.org/download.php?platform=osx&type=server

Windows version:

https://filezilla-project.org/download.php?platform=win64&type=server

The installation program installs three icons on your desktop: Start Filezilla Server, Stop Filezilla server, and Administrator Filezilla Server. In use, click on the **Start Filezilla Server** icon and wait a few seconds. Then click on the Administrator Filezilla Server and hit "OK" to accept the defaults:

Connection		
<u>H</u> ost:		
127.0.0.1		
Port:		
4148		
Pass <u>w</u> ord:		
•••••		
Save the passw	vord	
Automatically of	connect to this s	server at startup
	ОК	Cancel

This logs into the server (which is running in the background) and allows you to configure it. In a perfect world, this is the screen you'll see:



Next, hit **Server --> Configure...** Click on Users (on the left side) and add a new anonymous user as illustrated below:

E Settings for server 127.0.0.1:	14148						×
Server listeners	Rights manager	nent / Users					
■Protocols settings FTP and FTP over TLS (FTPS) ■Rights management Groups Users Administration Logging Let's Encrypt®	Available users <system users<br="">anonymous gary</system>		General Filte Guser is ena Credentials: Do not requir Member of gr Mount points: Virtual path Add	rs Speed L bled e a password oups: Native pat C\Users\M Remov	to log in h h ikab Read Q Aç e W	ssions s mode: + Write ply permissions to itable directory str	v subdirectories ucture
	Add	Remove	Description:				
	Duplicate	Rename					
					OK	Cancel	Apply

Look at the variables on the right:

• User is Enabled should be checked

• Set the <u>Credentials</u> dropdown to <u>Do not require a password to log</u> <u>in</u> (simplifies everything) • Enter <u>mount points</u>: On the left, enter a forward slash. This is the unix-style path that the camera will see when it logs in. On the "Native Path", put in the DOS-style directory path where you want the images placed.

That's it. Hit "Apply", then "OK". You only need to do this configuration once; once it's configured the Administrator program need not be open and you shouldn't need to open it again.

Next we need to poke a hole in the computer's firewall and tell it to allow communication from Filezilla Server to pass through. On my Windows 10 machine, I searched for and opened "Windows Defender Firewall with Advanced Security". The following window came up:

Windows Defender Firewall with	n Advanced Security						-	\times
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A Connection Security Rules Montoring	Inbound Rules Name SRRayer SRRayer SRRayer SRRayer SRRayer SRRayer SRRayer SRRayer Field SRRayer Field	Group	Profile Private Public Public Public Private Private Private Private Private Private Private Private Private Public Private Private Private Public Private Pri	Enabled Ves Ves Ves Ves Ves Ves Ves Ves Ves Ves	Action A Allow All	Actions Inbound Rules Image: Second Seco	e p	* · · · · · · · · · · · · · · · · · · ·
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To add Filezilla Server to the whitelist, click on the "Inbound Rules" in the top-left corner, click on "New Rule..." in the top right corner (both are mildly highlighted in the screen grab above). Select "Program" from the first screen, and then specify the path C:\Program Files\FileZilla Server\filezilla-server.exe . (That's what it is for Windows.) Accept the default values for the remaining screens as you continue to hit "Next". Finally, you can give it a name which has no effect on anything so I just called it "Filezilla server". When you're done you'll see that "Filezilla Server" has been added to the list (top item in illustration below).

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PWindows Defender Firewall with	Inbound Rules					Actions		
Inbound Rules	Name	Group	Profile	Enabled	Action ^	Inbound Rules		
Outbound Rules	Filezilla Server		All	Yes	Allow	New Rule.		
Monitoring	SKPlayer		Private	Yes	Allow	Tilter by Drofile		
inormoring	SKPlayer		Public	Yes	Allow	Filter by Profile		
	SKPlayer		Public	Yes	Allow	Filter by State		,
	SKPlayer		Private	Yes	Allow	Filter by Group		•
	🔮 Dropbox		All	Yes	Allow	View		•
	Filezilla		All	Yes	Allow	C Refresh		
	🧭 Filezilla		All	Yes	Allow			
	Firefox (C:\Program Files\Mozilla Firefox)		Private	Yes	Allow	Export List		
	Firefox (C:\Program Files\Mozilla Firefox)		Private	Yes	Allow	👔 Help		
	Macro Deck Server		Private,	Yes	Allow	Filezilla Server		
	Macro Deck Server		Private,	tes	Allow	Disable Bule		_
	Macro Deck Server		Private,	Ver	Allow	Disable Kule		
	Microsoft OpeNote		Private,	Ver	Allow	of Cut		
	Microsoft OneNote		Public	Ves	Allow	Copy		
	Microsoft OneNote		Private	Yes	Allow	🗙 Delete		
	Microsoft OneNote		Public	Yes	Allow	Properties		
	Microsoft SharePoint Workspace		Private	Yes	Allow			
	Microsoft SharePoint Workspace		Public	Yes	Allow	Melp		
	Microsoft SharePoint Workspace		Private	Yes	Allow			
	Microsoft SharePoint Workspace		Public	Yes	Allow			
	OBS Studio		Private	Yes	Allow			
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Next, we need to figure out what the IP address is of your laptop so we can tell the camera to connect to it. With your smartphone's wi-fi hotspot turned on and your laptop connected to it, open a CMD window on Windows or the Terminal window on a Mac and type the following command:

Ipconfig <enter button>

This will bring up a lot of information. Three lines from the bottom you'll see "IPv4 Address...." THAT is the address that we will program into the camera next. In my case the IP address I'm going to write down is 192.168.0.30.



Next, go to the Sony camera.

- Configure the camera to connect to your smartphone's Wi-Fi hotspot: MENU → ⊕ → Wi-Fi → Access Point Set. (and proceed according to the instructions in Section 4.4 of the original book).
- Configure the FTP server settings on the camera: MENU → ⊕
 → Transfer/Remote → FTP Transfer Func. Submenus are below:
 - a. FTP Function: On
 - b. FTP Connect Method: Wi-Fi
 - c. Server Setting \rightarrow Server $1 \rightarrow$ Display Name: (Enter something here. It's just for your own memory jog.)
 - d. See below for more.

Netv	work > Transfer/R > FTP Transfer Fu	Inc. 1/4
	FTP Function	On
	FTP Connect Method	Wi-Fi
	USB-LAN/Tethering Connect	
•	Server Setting	Server 1
	Connected Server 1 (Lenovo) SSID: Gary's S21	

Destination settings: The Host Name should be the IPv4 address you wrote down a couple of steps ago. Set the Port number to 21, the standard for FTP.

Destination Settings		(7772
Host Name	192.168.0.30	
Secure Protocol		Off
Root Certificate Error		
Port	21	
OK	Cancel	
		٠?

Directory Settings: Default values are fine.

Specify Directory	
Directory Hierarchy	Standard
Same File Name	Does Not Overwrite
ОК	Cancel

User Info Settings: The next screen should ideally be filled out as below (with the password field being left blank).

User Info Settings	1777
User	anonymous
Password	
OK	Cancel

And believe it or not, that's it! Turn on your camera, take a few pictures, and then keep an eye on the "Native Path" directory you told Filezilla about when you configured the anonymous username.

Here are the data transfer speeds I was able to attain using this setup:

- 10 seconds for a 4.5 MB Large .jpg
- 1 minute for a 34 MB RAW file
- Times can vary +/- 100%.

TIP: You MUST keep your camera on until the final FTP image has uploaded completely. Otherwise the transfer stops and the camera will try to upload it again once you turn it on and establish a connection. The 2^{nd} upload attempt will have a _1 suffix in the filename to differentiate it from the partial aborted upload filename.