

USING A WEBCAM TO SPY ON SOMETHING

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**Web location for this
presentation**

<http://aztcs.apcug.org>

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SUMMARY

You can use a Webcam to spy on something. Most of us own one or two Webcams already:

one that is part of a laptop computer and one that is part of a smart cell phone

You can also buy a USB Webcam to attach to a computer.

You can also buy various standalone Webcams including the \$36+ "Wyze Cam".

TOPICS

- Webcam Basics
- Determining the Specs of a Webcam
- A Demonstration of 5 Webcams
- Requirements for All Webcams
- Using "Virtual Network Computing" (VNC) and "Remote Desktop" To View A Remote Laptop's Webcam
- Using "Droidcam" and "Iriun" to "Attach" a Computer to a Cell Phone's Camera

TOPICS (continued)

- Using "Skype" in Auto-Answer Mode to Spy On Your Pet(s)
- Using "Contacam" to Send Video Motion Alerts to your Cell Phone(s) and Email Addresses
- Installing and Using A "Wyze Cam"

WEBCAM BASICS

- Basic information about Webcams including legal issues, security issues, hiding security cameras, and local networking issues is available at http://aztcs.apcug.org/meeting_notes/winhardsiq/webcams/Webcam-basics.pdf

TYPES OF WEBCAMS

- Integrated Webcams: Webcams that are part of a cell phone, a tablet, a monitor, or a laptop
- USB Webcams: Require a USB connection to a powered-up computer or tablet
- Network Webcams: "IP Webcams" connect to a DVR or VCR, Wi-Fi attached Webcams that connect to a DVR or VCR (= professional video surveillance systems for organizations)
- IoT Webcams: IoT = "Internet of Things", Webcam with it's own operating system that connects to your computer and/or a server on the Internet or both

TYPES OF WEBCAMS FOR HOME USE

- Integrated Webcams: Webcams that are part of a cell phone, a tablet, a laptop, or a monitor
- USB Webcams: Require a USB connection to a powered-up computer or tablet
- Network Webcams: "IP Webcams" connect to a Desktop PC, Wi-Fi attached Webcams that connect to a DVR or NVR (= professional video surveillance systems for organizations)
- IoT Webcams: IoT = "Internet of Things", Webcam with it's own operating system that connects to a cloud-based server which then connects to a cell phone/tablet and/or a computer

TYPES OF WEBCAMS FOR HOME USE

(continued)

- **Integrated Webcams:** You have these Webcams because they are bundled with cell phones, tablets, laptops, or high-end monitors
- **USB Webcams:** Require a USB connection to a powered-up computer or tablet. You usually end up buying them because you need them to participate in Zoom, Teamviewer, Facetime, or other online conferencing activities.
- **IoT Webcams:** IoT = "Internet of Things", these are the newest Webcams and they have massive advantages in terms of cost, size, and electrical energy usage

TYPES OF WEBCAMS FOR HOME USE

(continued)

- Integrated Webcams or USB Webcams or virtualized cell phone Webcams are required for Zoom, Skype, Google Duo, or Apple Facetime.

TYPES OF WEBCAMS FOR HOME USE

(continued)

- You cannot use an IoT Webcam for these types of conferencing apps.
Integrated Webcams or USB Webcams have to have a power-up "operating system".
- IoT Webcams: IoT = "Internet of Things" are stand-alone computing devices. While they depend on an active Internet connection, they do not rely on an interconnected "operating system". IoT Webcams cannot be used for Zoom, Skype, Google Duo, or Apple Facetime.

USB WEBCAMS AND THEIR MICS

- Most USB Webcams have microphones inside them:
When you plug them into a USB Webcam into a USB port, it's microphone automatically becomes the default "Recording Device" in Windows computers!
If you do not want it to mess up your existing microphone device, go into the "Recording" tab in "Sound" and disable it.

REQUIREMENTS FOR ALL WEBCAMS

- Recordings and photos are often useful to police agencies, news agencies, private investigators, and usable in a court of law:

You do not want a camera that makes video clips and photos that you have to personally explain to police agencies and courts of law:

REQUIREMENTS FOR ALL WEBCAMS

(continued)

- Video clips and photos have a time and date stamp on each and every frame
- Can tilt the camera forward and backward after attaching it to the holder or tripod
- 24/7 recording to an MicroSDHC module that is inserted into the camera (and optionally recording of video clips and photos to the cloud)
- Video recordings also have recorded audio Wi-Fi connection or USB connection or Wired network connection
- 5 Volt DC power via a AC power supply or a PowerOverEthernet connection

DETERMINING THE QUALITY OF A WEBCAM

- Install the Webcam
- Start a Web browser
- Go to
<https://webcamtests.com>

DETERMINING THE QUALITY OF A WEBCAM (continued)

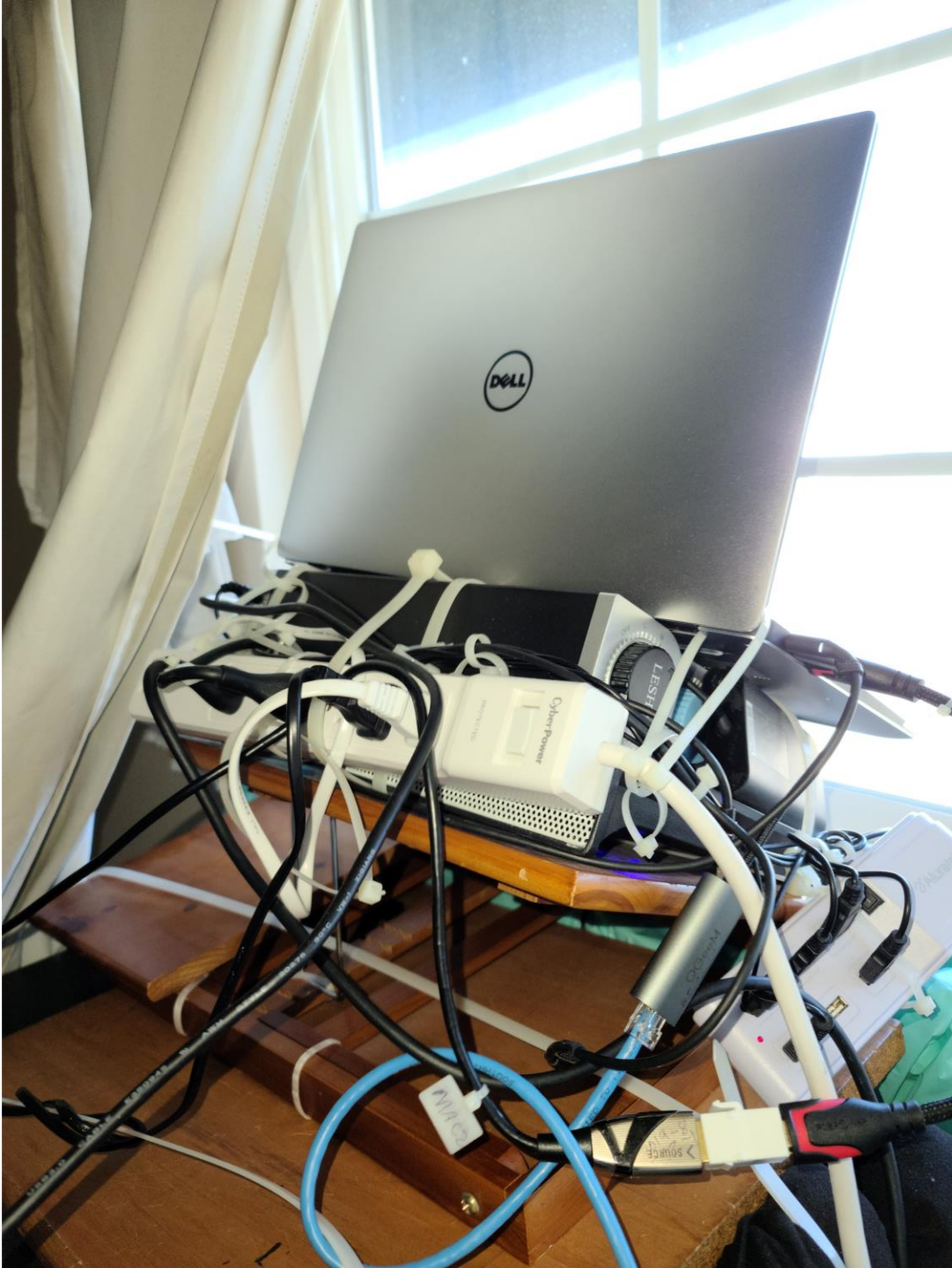
- About <https://webcamtests.com> :
This Web site can analyze and test Webcams that are part of, or are attached to "Windows.." computers, "macOS" computers, and Linux computers.
This Web site cannot test "IoT Webcams".
This Web site generates a "Quality" value for any Webcam that you test there.
It also provides an optimized photo of the scene that the Webcam is looking at.

- Webcam that is part of a Dell XPS 15 laptop (0.9 Megapixels, 1280x720, Quality = **332**)
- Free "Droidcam" connection to connect a Windows 10 computer to an iPhone 10's rear-facing camera (0.3 Megapixels, 640x480, Quality = **352**)
- \$5 "DroidcamX" connection to connect a Windows 10 computer to an Samsung S20 Ultra 5G's rear-facing camera (0.3 Megapixels, 640x480, Quality = **550**)
- \$40 "Nexigo N60" Webcam (2 Megapixels, 1920x1080, Quality = **600**)
- \$50 "Logitech HD C505e HD" Webcam (1 Megapixel, 1280x720, Quality = **1196**) \$70 ¹⁷

DEMONSTRATIONS OF USB WEBCAMS

(continued)

- Webcam that is part of a Dell XPS 15 laptop
(0.9 Megapixels, 1280x720, Quality = **332**)
This is actually a "USB 2 High Speed"
Sonix 6713 Webcam.
("USB 2 High Speed" = 480 Mbps)





DEMONSTRATIONS OF USB WEBCAMS

(continued)

- "Droidcam" connection to connect a Windows 11 computer to an iPhone 10's rear-facing camera (0.3 Megapixels, 640x480, Quality = **339**)



DEMONSTRATIONS OF USB WEBCAMS

(continued)

- "Droidcam" using a Wi-Fi to connect to an iPhone 10's rear-facing camera to a Windows 11 computer
(0.3 Megapixels, 640x480, Quality = **352**)





DEMONSTRATIONS OF USB WEBCAMS

(continued)

- "DroidcamX" using a Wi-Fi connection to connect to a Windows 10 computer to an Samsung S20 Ultra 5G's rear-facing camera
(0.3 Megapixels, 640x480, Quality = **550**)



DEMONSTRATIONS OF USB WEBCAMS

(continued)

- \$40 "Nexigo N60" Webcam

(2 Megapixels, 1920x1080, Quality = **600**)

[https://www.amazon.com/Microphone-NexiGo-Computer-110-degree-](https://www.amazon.com/Microphone-NexiGo-Computer-110-degree-Conferencing/dp/B088TSR6YJ/ref=sr_1_1_sspa?crid=21NEUL3SN7ZOO&keywords=Nexigo+N60&qid=1644618558&srefix=nexigo+n60%2Caps%2C111&sr=8-1-spons&psc=1&smid=A1HNC035CZ2MR5&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFGSzdUMzFJMEpPWEkmZW5jcnlwdGVkSWQ9QTAzNzI2MDBRRTIPUIJWS0VCMTQmZW5jcnlwdGVkQWRJZD1BMDAwMzEwM0U0WEExVR003U0ZRTSZ3aWRnZXROYW1IPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)

[Conferencing/dp/B088TSR6YJ/ref=sr_1_1_sspa?crid=21NEUL3SN7ZOO&keywords=Nexigo+N60&qid=1644618558&srefix=nexigo+n60%2Caps%2C111&sr=8-1-spons&psc=1&smid=A1HNC035CZ2MR5&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFGSzdUMzFJMEpPWEkmZW5jcnlwdGVkSWQ9QTAzNzI2MDBRRTIPUIJWS0VCMTQmZW5jcnlwdGVkQWRJZD1BMDAwMzEwM0U0WEExVR003U0ZRTSZ3aWRnZXROYW1IPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=](https://www.amazon.com/Microphone-NexiGo-Computer-110-degree-Conferencing/dp/B088TSR6YJ/ref=sr_1_1_sspa?crid=21NEUL3SN7ZOO&keywords=Nexigo+N60&qid=1644618558&srefix=nexigo+n60%2Caps%2C111&sr=8-1-spons&psc=1&smid=A1HNC035CZ2MR5&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFGSzdUMzFJMEpPWEkmZW5jcnlwdGVkSWQ9QTAzNzI2MDBRRTIPUIJWS0VCMTQmZW5jcnlwdGVkQWRJZD1BMDAwMzEwM0U0WEExVR003U0ZRTSZ3aWRnZXROYW1IPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)



DEMONSTRATIONS OF WEBCAMS

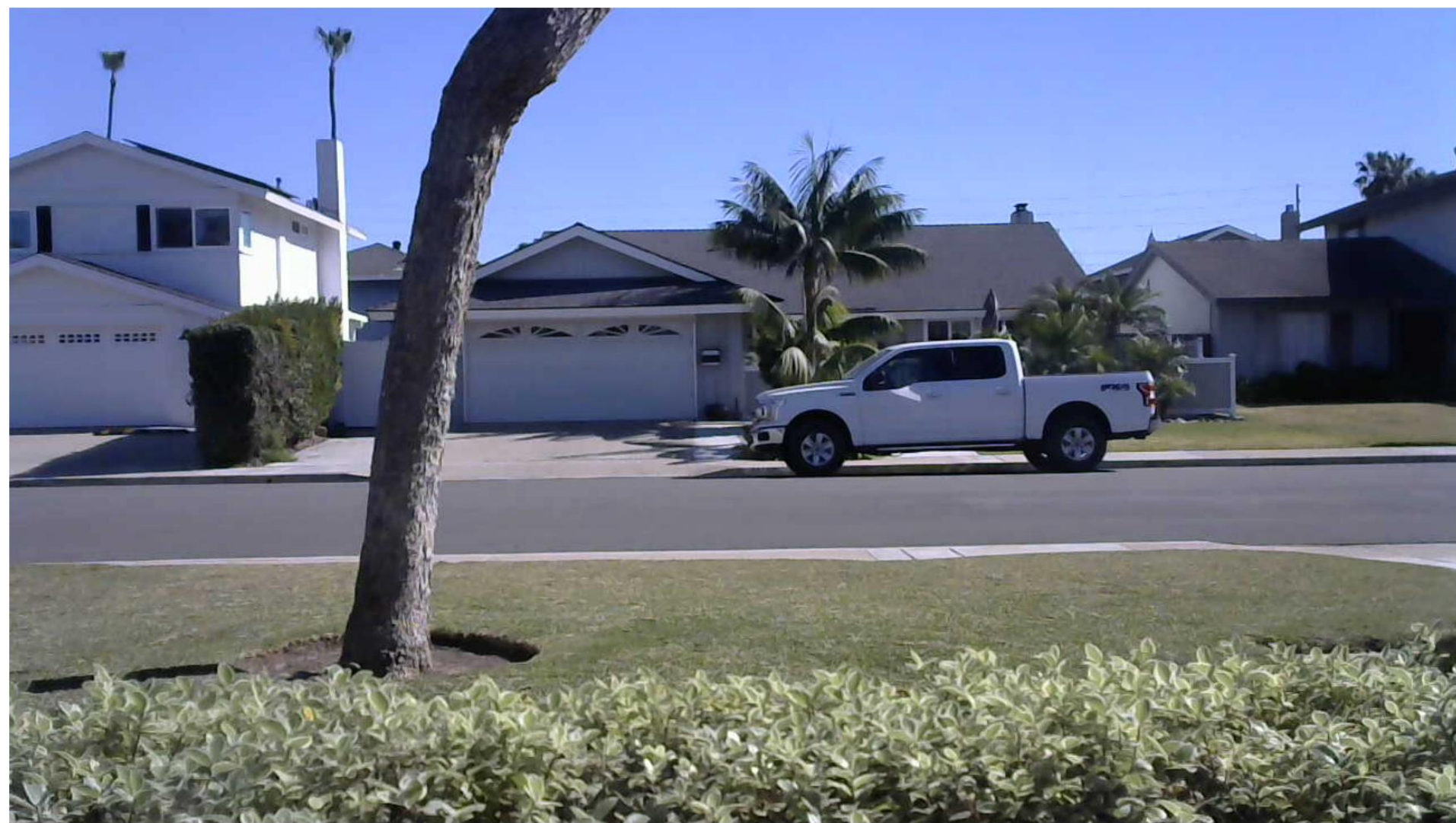
(continued)

- \$50 "Logitech C505" Webcam

(1 Megapixel, 1280x720, Quality = **1196**)

https://www.amazon.com/Logitech-C505-Webcam-720p-Long-Range/dp/B08BNJPVXG/ref=sr_1_1_sspa?crid=2O4AWB9J4EKU&keywords=Logitech+505&qid=1644618722&srefix=logitech+505%2Caps%2C127&sr=8-1-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFNTTk1U0hFNk1SVUwmZW5jcnlwdGVkSWQ9QTA4ODYyOTMzSIRIMkNRWlJHRjAwJmVuY3J5cHRIZEFkSWQ9QTAxNzM5MzMxRERWNTdJWVFLUFQ2JndpZGdldE5hbWU9c3BfYXRmJmFjdGlvbj1jbGlja1JlZGlyZW50JmRvTm90TG9nQ2xpY2s9dHJlZQ==

No 1/4-in. threaded Tripod hole in the base.



DEMONSTRATIONS OF WEBCAMS

(continued)

- "Droidcam" connection to connect a Windows 10 computer to an iPhone 10's front-facing camera (2 Megapixels, 1920x1080, Quality = **2895**)



DEMONSTRATIONS OF WEBCAMS

(continued)

- \$70 "Logitech HD Pro C920" Webcam
(2 Megapixels, 1920x1080, Quality = **6806**)
https://www.amazon.com/gp/product/B085TFF7M1/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&th=1
Has a 1/4-in. threaded Tripod hole in the base



OPTIONS THAT WORK WITH "ZOOM"

- ~~"Virtual Network Computing" (VNC) or "Remote Desktop Connection" to use a computer to view a laptop's camera~~

- Dell laptop's integrated (USB 2) Webcam
- \$30 USB no-name generic Webcam (XPCAM, etc)
- \$70 USB Logitech Webcam
- \$120 USB Nexigo Webcam
- "Droidcam" connection to connect a computer to a cell phone's camera

USING "VIRTUAL NETWORK COMPUTING" (VNC) AND "REMOTE DESKTOP" TO VIEW A REMOTE LAPTOP'S WEBCAM

- "Virtual Network Computing" (VNC)
=Free software to use a Webcam that is part of or attached to another computer. (Usually requires a powered-up monitor or a dummy monitor plug at the target computer.)
- "Remote Desktop Connection"
=Partly-bundled Windows.. software to use a Webcam that is part of (or attached to) another computer: Target computer must be running "Windows 10 Pro" or "Windows 11 Pro"

USING "VIRTUAL NETWORK COMPUTING" (VNC) AND "REMOTE DESKTOP" TO VIEW A REMOTE LAPTOP'S WEBCAM

- See:

- ❑ http://aztcs.apcug.org/meeting_notes/winhardsig/webcams/remote-access.pdf
- ❑ http://aztcs.apcug.org/meeting_notes/winhardsig/webcams/remote-access-VNC.pdf
- ❑ http://aztcs.apcug.org/meeting_notes/winhardsig/webcams/remote-access-RDP.pdf

USING "DROIDCAM" TO "ATTACH" A COMPUTER TO A CELL PHONE'S CAMERA

- See

- http://aztcs.apcug.org/meeting_notes/winhardsig/webcams/cell-phone-as-cam-for-Win.pdf

- http://aztcs.apcug.org/meeting_notes/winhardsig/webcams/cell-phone-as-cam-for-Mac.pdf

USING "SKYPE" IN AUTO-ANSWER MODE TO SPY ON YOUR PET(S)

- See http://aztcs.apcug.org/meeting_notes/win_hardsig/webcams/Skype-auto-answer.pdf

INSTALLING AND USING A "WYZE CAM"

- See [http://aztcs.apcug.org/meeting_notes/winhardsi
g/webcams/Wyze-Cam.pdf](http://aztcs.apcug.org/meeting_notes/winhardsi
g/webcams/Wyze-Cam.pdf)

VIEWING AND SAVING VIDEO FILES STORED BY WEBCAMS

- If you have an important video file that is stored inside an microSDHC card inside a Webcam, yank it out and save it. (Then put a fresh, blank microSDHC card into the Webcam.) Do not leave it inside the Webcam or the important video file will be overridden in a certain number of days or hours

VIEWING AND SAVING VIDEO FILES STORED BY WEBCAMS (continued)

- If you have an important video file that is stored inside a location up in an Internet cloud service, download it and save it to local flash drives, CD-Rs, hard drives and save it in more than one place.
- Do not leave an important video file up at an Internet cloud service, or will be over-ridden in a certain number of days or hours

VIEWING VIDEO AND SAVING FILES STORED BY WEBCAMS (continued)

- Do not use Windows' bundled "Movies and TV" since it often does not play audio in files such as .MP4 files that are saved by software used to control Webcams
- Use the 64-bit version of "VLC Media Player" from videolan.org since the 64-bit version of "VLC Media Player" reliably plays the audio portion of files that are saved by software used to control Webcams

Questions ???

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