

# 10:

## STREAMING MEDIA: BASICS, MEDIA CAPTURE, AND SCREEN RECORDING

by Francis Chao

fchao2@yahoo.com

**TuCS** COMPUTER  
**Son**  
SOCIETY

**#1**  
**WINNERS**  
WINdows usERS



An International  
Association of Technology  
& Computer User Groups

**Web location for this  
presentation:**

<http://aztcs.org>

Click on “**Meeting  
Notes**”

# SUMMARY


The videos and audios that you view or listen to in a Web browser arrive in your computer. Then they are displayed inside a Web browser as a video rectangle or as audio player controls. You can use various software programs to save these media items for future viewing or listening.

# TOPICS

- Path of Streaming Video or Audio in a "Windows.." Computer
- Two Ways to Save Video or Audio Streams for Future Viewing or Listening:
  - ❖ Method 1: Media Capture
  - ❖ Method 2: Screen Capture

# PATH OF STREAMING MEDIA IN A "WINDOWS.." COMPUTER

- An online video or audio travels from a Web server to your computer over the following path:



Web server in the Internet "cloud"  
to  
your computer's network adapter  
to  
network stack (drivers and software)  
to  
"Graphics Device Interface" ("GDI")  
to  
Web browser as video or audio

# TWO WAYS TO RECORD STREAMING MEDIA (continued)

- Method 1:

**MEDIA CAPTURE**

- Method 2:

**SCREEN RECORDING**

# TWO WAYS TO RECORD STREAMING MEDIA

- Method 1 = **MEDIA CAPTURE**:  
Use a software program to capture the media stream at the network stack
- Method 2 = **SCREEN RECORDING**:  
Use a software program to capture the media stream at the Graphics Device Interface (GDI)



# "METHOD 1" DETAILS:

- Method 1 = "MEDIA CAPTURE" consists of using a software program to capture the media stream at the network stack:
- Applian's "Replay Media Catcher" usually uses "Method 1"<sup>9</sup>



Web server

to

your computer's network adapter

to

network stack (drivers and software)

**MEDIA CAPTURE**

to

"Graphics Device Interface" ("GDI")

to

Web browser as video or audio

# "METHOD 1" DETAILS

(continued):

- Method 1 is more difficult for a software developer to implement because streaming videos and audio can arrive at your computer as endless data streams with no file start and end indicators, single file downloads, and various kinds of file chunks

# "METHOD 1" DETAILS

(continued):

- Web sites that display videos that work with "Method 1" (= "media capture"):

YouTube.com

Vimeo.com

<https://www.cnn.com/videos>

# "METHOD 2" DETAILS:

- Method 2 consists of using a software program to capture the media stream at the "Graphics Device Interface" (GDI)  
The "Graphics Device Interface" is the part of the Windows.. operating system that generate the monitor screen and the print jobs



Web server

to

your computer's network adapter

to

network stack (drivers and software)

to

"Graphics Device Interface" ("GDI")

**SCREEN RECORDING**

to

Web browser as video or audio

# "METHOD 2" DETAILS

(continued):

- Method 2 is simpler for a software developer to implement because a "screen recording" program does not have to deal with the complexity caused by the many formats that streaming media can have

# "METHOD 2" DETAILS

(continued):

- Method 2 is sometimes called "screen capture" or "screen recording"
- Applian's "Replay Video Capture" uses "Method 2"



# "METHOD 2" DETAILS (continued):

- Web sites that work with  
"Method 2 ="Screen Recording":  
Netflix  
Hulu  
Amazon "Prime Video"  
CBS All Access

TWO METHODS TO  
"BORROW" A COPY OF  
STREAMING MEDIA  
FOR "TIME SHIFTING",  
"FAIR USE", OR  
"EDUCATIONAL USE":

Web server

to

your computer's network adapter

to

network stack (drivers and software)

**METHOD 1="MEDIA CAPTURE"**

to

"Graphics Device Interface" ("GDI")

**METHOD 2="SCREEN RECORDING"**

to

Web browser as video or audio<sup>19</sup>

Web server

to

your computer's network adapter

to

network stack (drivers and software)

**METHOD 1="MEDIA CAPTURE"**

**via the free "aTube Catcher" app**

**or via the Replay Media Catcher's**

**default "Stream Downloader"**

to "Graphics Device Interface" ("GDI")

to Web browser as video or audio

DESKTOP APPS FOR  
"SCREEN RECORDING"  
AT THE  
"GRAPHICS DEVICE  
INTERFACE":

Web server

to your computer's network adapter

to network stack (drivers and software)

to

"Graphics Device Interface" ("GDI")

**METHOD 2="SCREEN RECORDING"**

**via iSpring "Free Cam"**

**via the "Replay Video Capture",**

**via Replay Media Capture's "Digital**

**Video Recorder"**

to Web browser as video or audio

# IF YOU ARE NEW TO COMPUTERS..

- If you are new to computers or just want to get started with borrowing streaming media without dealing with too much complexity, download and install the iSpring "Free Cam" desktop app and use it for all video or audio streaming media.  
Then gradually learn to do "media capture".

# SOFTWARE NAMING WIERDNESS

- The naming of this type of software is imprecise:

The terms "capture", "catcher", "grab", "grabber", "recording", "screen recording" and "downloading" are all being used to refer to "media capture" and "screen recording" by software developers and retailers. 24