Capturing audio and video on the cheap

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How to keep the 'wife' happy while buying lots of electronic equipment

- Why spend lots of $$?

- You really don't want her to be 'this' mad

  - AT YOU!

Note: 'wife' implies you are married, but this could apply to your girlfriend, boyfriend or platonic life partner.

My Goals

- Record Local User Group (LUG) meetings and share in real-time.

- Record Events and share in real-time.

- Provide a podcast afterward somewhere online

- Create an Audio/Video Kit that can be distributed easily

- Simple setup / Tear down

- $ (AKA Cheap)

WARNING!

- I am not a professional audio or video engineer

- These are just **my** experiences

- I am here to share my experiences, not convince you that my way is the best way.
    - It probably isn't the best way, but it works for me and might for you as well!

Where I started

- Audio Only
  - Simple $7 microphone from Radio Shack
- Posting the podcast afterward
  - http://podcasts.utos.org
- Used audacity to put in a little intro audio
  - Very simple tool, works on all platforms (Linux, Mac, Winders)
  - Multi-track editing, clipping, noise removal, etc.

Next, I explored streaming

- Streaming using Shoutcast compatible server
    - Icecast 2.x (http://icecast.org)
    - Still only did audio
    - Started to investigate how to do video
- Streaming clients varied (and there are a lot available)
    - ices2
    - darkice
    - Several audio players stream to Shoutcast compatible servers

The audio needed improvement

- Out to Guitar Center I went:

    - Purchased an Alesis 8 Channel USB mixer

- Online to Amazon I went:

    - Purchased an Audio Technica lavalier remote microphone set

    - Purchased a 1/8" dynamic microphone

- Out to Radio Shack I went:

    - Purchased two lavalier remote microphone sets

    - Purchased several 1/8" to 1/4" adaptors

    - Purchased a few 1/4" to XLR adaptors

Requests for Video

- Clearly, video was important
  - Several listeners to the UTOS Podcasts were wondering why there was no video

- There are limitations
  - Streaming video requires a lot of bandwidth
    - Streaming client is around 100% more bandwidth
    - Those watching the stream live would cause the server to increase its load based upon the number of viewers

- Several considerations
  - Podcast video, stream audio
  - Stream at **much** lower quality, podcast high quality

Video for Cheap

- In January 2010, video became a reality
  - But it was a long road!
- Several questions along the way
  - What hardware do I need?
  - What software do I need?
  - How do I capture the screen and video?
  - Do I need to use firewire, or will USB work?
  - Etc., etc...
  - Can I do it for cheap?

Video Hardware

- DV camera
  - Canon ZR80 MiniDV Camcorder
- Webcams
  - Most any webcam works
  - Even the one built-in to your laptop
- Screen capture
  - vga2usb from Epiphan.com (great detail, but $$$)
  - Scan converter/EasyCAP ($, but detail suffers)
- Desktop
  - This one is uniquely useful

Video Capture Software

- In Windows and Mac, the choices are there, but they cost $$

- Using Linux, I could save hundreds by using already existing free software solutions:

  - Video Editors: Kdenlive, Kino, Pitivi

  - Screen Capture Software: Istanbul, gtk-RecordMyDesktop

- None of the free solutions provide streaming capability out-of-the-box

Introducing FreeSeeR
open source video studio in a backpack

- Two fellows from Canadia
    - Thanh Ha, Andrew Ross
- Record presentations, dv video and desktop, audio too!
    - Very flexible
    - Built on completely free libraries
    - Currently doesn't work on Winders (yet!)
- http://fosslc.com/drupal/freeseer
- http://www.fosslc.org/drupal/node/667 (demo)
- http://github.com/fosslc/freeseer (source code)

FreeSeeR – The Future

- FreeSeeR is designed for recording conferences

  - But it's much more versatile!

- Currently, FreeSeeR is lacking a few features

  - Streaming (v3.0)

  - Windows support (v3.0)

  - Session info from RSS (v3.0)

- Future features discussed

  - Multiple video sources

    - Picture-In-Picture,

    - Swap sources, etc.

  - Automatic upload for podcast

    - Prepending intro data and logos could also be done

Audio Hardware Resources

- Alesis MultiMix 8 USB ($129)

    - http://www.bhphotovideo.com/c/product/341021-REG/Alesis_MULTIMIX_8_USB_MULTIMIX_8_USB.html

- Alesis MultiMix 4 USB ($76)

    - http://www.bhphotovideo.com/c/product/598914-REG/Alesis_MULTIMIX_4_USB_MultiMix_4_4_Channel_Audio.html

- Audio Technica Remote Lavalier Microphone ($52)

    - http://www.amazon.com/Audio-Technica-ATW-R250-T8-VHF-Receiver/dp/B000UV8KT2

- Radio Shack Wireless Lapel Microphone ($50)

    - http://www.radioshack.com/product/index.jsp?productId=2131022

- Crown Pressure Zone Microphone ($69)

    - http://www.amazon.com/Crown-Sound-Grabber-Condenser-Microphone/dp/B0002H0ER0

Video Hardware Resources

- DV Camera ($125)

  - http://www.camcorderinfo.com/content/canon-zr80-camcorder-review.htm

- vga2usb frame grabber ($300)

  - http://www.epiphan.com/products/frame-grabbers/vga2usb/

- Scan Converter / EasyCAP (~$50)

  - http://www.dealextreme.com/details.dx/sku.15223
  - http://www.dealextreme.com/details.dx/sku.26319

Questions??

- Feel free to contact me:
  - herlo1@gmail (email)
  - http://sexysexypenguins.com (my website)
  - #utos, #freeseer, #uphpu (irc.freenode.net)
  - @herlo (twitter/facebook/etc)
- If you want to help and/or learn these tools:
  - Join Utah Open Source's Volunteer Member program
    - Record LUGs and open source events
  - File Bugs on FreeSeeR
  - Document, Test, Rinse and Repeat