libv4l

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Background

- Fedora better webcam support feature:
  http://fedoraproject.org/wiki/Features/BetterWebcamSupport

- Get gspca into the mainline kernel

- Remove format conversion from gspca

- Applications don't handle the new formats

- Sollution: Write a conversion library

- And patch **ALL** applications to use it

libv4lconvert

- Convert from: 24 bit RGB/BGR, YUV420 planar, YUYV/YVYU packed, bayer(BGGR, GBRG, RGGB, GRGB), spca501, spca505, spca508, mjpeg, jpeg, spca561, sn9c10x, pac207, pixart jpeg

- To: 24 bit RGB/BGR, YUV420 planar

- Functions for ENUM_FMT, ENUM_FRAMESIZE, ENUM_FRAMEIVAL

- Rotate 90 / 180 degrees

libv4l2

- Emulate a /dev/videoX v4l2 device, with support for more video formats

- open() -> v4l2_open, iocttl -> v4l2_ioctl, etc.

- Uses libv4lconvert

libv4l1

- Many v4l2 drivers do not offer v4l1 compatibility

- Solution write a userspace library emulating /dev/videoX v4l1 API

- open() -> v4l1_open, iocttl -> v4l1_ioctl, etc.

- Builds on top of libv4l2

The Future?

- Add emulated controls

- Better handle rotation

- Software image quality enhancements:

  - White balance

  - Normalize

- Software image quality enhancements have a separate measure / transform phase

- GET_WEBCAM_ATTR ioctl

- Emulated controls persistency